Form Revised 2/99

ENVIRONMENTAL ASSESSMENT WORKSHEET

Note to preparers: This form is available at www.mnplan.state.mn.us. *EAW Guidelines* will be available in Spring 1999 at the web site. The Environmental Assessment Worksheet provides information about a project that may have the potential for significant environmental effects. The EAW is prepared by the Responsible Governmental Unit or its agents to determine whether an Environmental Impact Statement should be prepared. The project proposer must supply any reasonably accessible data for — but should not complete — the final worksheet. If a complete answer does not fit in the space allotted, attach additional sheets as necessary. The complete question as well as the answer must be included if the EAW is prepared electronically.

Note to reviewers: Comments must be submitted to the RGU during the 30-day comment period following notice of the EAW in the *EQB Monitor*. Comments should address the accuracy and completeness of information, potential impacts that warrant further investigation and the need for an EIS. The notice will be published in the September 15 *Monitor*. The comment period for this EAW ends at 4:30 PM on October 15.

1. **Project title:** NGPP Minnesota Biomass

2. **Proposer:** NGPP Minnesota Biomass, LLC

   Contact person: Douglas E. Ferber
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3. **RGU:** Environmental Quality Board

   Contact person: Bill Storm
   Title: EQB Staff
   Address: 658 Cedar Street
   City, state, ZIP: St. Paul, MN 55155
   Phone: 651-296-9535
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4. **Reason for EAW preparation** (check one)
   ____ EIS scoping X Mandatory EAW ____Citizen petition ____ RGU discretion _____ Proposer volunteered

   If EAW or EIS is mandatory give EQB rule category subpart number 4410.4300 Subpart 3 **and subpart name** Electric Generating Facilities

5. **Project location** **County:** Waseca **City/Township**:
   Section 13 **Township** **107 North** **Range** **23 West** (Site 1 - St. Mary Township)
   Section 19 **Township** **107 North** **Range** **22 West** (Site 2 - Woodville Township)

   Attach each of the following to the EAW:
   - County map showing the general location of the project;
   - U.S. Geological Survey 7.5 minute, 1:24,000 scale map indicating project boundaries (photocopy acceptable);
   - Site plan showing all significant project and natural features.

   Figures:
   1 General Location Map
   2 Site Location Map with Noise Monitoring Locations

3a Preliminary Site Layout (Site 1)
3b Preliminary Site Layout (Site 2)
4a Delineated Wetlands Map(Site 1)
4b Delineated Wetlands Map(Site 2)
5a NRCS Soils Map (Site 1)
5b NRCS Soils Map (Site 2)
6 Process Flow Diagram

6. **Description**

a. Provide a project summary of 50 words or less to be published in the *EQB Monitor.*

NGPP Minnesota Biomass, LLC proposes to construct, own and operate a biomass-fueled power plant in Waseca, Minnesota. The project will burn wood chips, wood wastes and other biomass fuels to produce electricity. The project will provide a net output of 38.5 MW of electricity delivered to the local utility grid.

b. Give a complete description of the proposed project and related new construction. Attach additional sheets as necessary. Emphasize construction, operation methods and features that will cause physical manipulation of the environment or will produce wastes. Include modifications to existing equipment or industrial processes and significant demolition, removal or remodeling of existing structures. Indicate the timing and duration of construction activities.

Project Overview

NGPP Minnesota Biomass, LLC proposes to construct, own, and operate a "closed loop" biomass-fueled power generating plant. The new plant, expected to be completed in late 2006, will convert approximately 40,000 tons of wood, wood wastes, and agricultural biomass per month into electricity. The electricity will be provided to the Xcel Energy electric grid for distribution to its customers. NGPP Minnesota Biomass LLC expects to complete construction on the plant in late 2006 and begin operations upon completion.

The project will be located on approximately 80 acres near the city of Waseca, Minnesota. A general location map, a specific site location map (7.5 minute U.S. Geological Survey quadrangle map), and a preliminary site layout are included as Figures 1, 2, 3a and 3b, respectively. NGPP Minnesota Biomass, LLC will own, build, and operate the station. The plant will produce 38.5 MW of electricity for the local utility grid, enough annual energy to supply approximately 30,000 homes. A transmission line will connect the project to the electric transmission grid in the vicinity of the Loon Lake substation.

This renewable energy supply system will displace approximately 22.4 million therms of Natural Gas per year or 370,714 tons of coal per year presently used to generate electricity for Xcel Energy's customers.

Project Elements

The major elements of the project will include: a boiler, steam turbine-generator, fuel handling and receiving system, and other essential auxiliary equipment and maintenance facilities. A preliminary site plan for each of the sites being considered is shown in Figures 3a & 3b and a process flow diagram is shown in Figure 6.

Boiler

The boiler will deliver approximately 350,000 pounds per hour (pph) of steam at a pressure of approximately 1500 psi and a temperature of approximately 950 Degrees F.

Wood or blended fuel (wood and agricultural biomass) is introduced to the combustion chamber by air assisted distribution spouts, which distribute the fuel over the grate. Partial ignition occurs above the grates. Combustion air is introduced below the grate and through over fire air (OFA) for this firing system. The grate system will move the burning fuel and ash from the rear of the furnace to the front where ash falls into a water filled ash hopper.

The boiler will be operated under a balanced draft with a forced air fan to provide preheated inlet air to the furnace. This will be supplemented by over fire air fans to assist in completing combustion above the grate. An induced draft fan will discharge cleaned flue gas to the stack while controlling the furnace area to a slightly negative pressure.

Steam Turbine-Generator

The turbine generator will provide a gross output of approximately 41.5 MW. It is anticipated that the in house generation needs will be approximately 3 MW leaving a net generation of approximately 38.5 MW. Throttle steam conditions will be matched to the boiler steam. The steam turbine will exhaust at approximately 2.5 inches of Mercury absolute to a condenser.

The steam turbine will transmit its power to the generator. Power will be produced and stepped up to transmission line voltage in the plant's substation before being transmitted to the grid.

Fuel handling equipment

The fuel handling and receiving system will receive wood and agricultural biomass. NGPP Minnesota Biomass, LLC anticipates that semi-trailer trucks with a load capacity of approximately 20 tons or greater will typically deliver wood and agricultural biomass to the plant. The fuel receiving system is shown in the process fuel flow diagram (Figure 6).

<u>Wood / Wood Waste materials</u>

Wood and wood waste materials will primarily be chipped off site for delivery. The preparation principally consists of chipping to reduce the size of the wood chips to 3 inch or smaller. Incoming vehicles will be weighed and visually inspected for foreign materials or objects before being sent to a truck unloader. The material received will be conveyed through magnetic separators to remove tramp metals and then to screens, which will verify acceptable material size. Oversize materials will be sent to wood hogs (hammer mills) for size reduction and returned to the screen as appropriately sized material. The hammer mills will be enclosed to minimize noise and dust.

Acceptable material will be transferred to either a fixed stacker or a boom stacker for placement in storage or for blending and immediate retrieval for boiler fuel.

Material that is slated for storage will be transferred to the storage piles by large capacity front-end loaders from either of the stacker assemblies or directly deposited by self-unloading trucks. Wood storage piles will be arranged in rows. Wood rows will be separated from each other by a fire lane. The wood storage area will be surfaced with class 5 gravel. NGPP Minnesota Biomass, LLC anticipates that the plant will have approximately 120 days of wood fuel in storage.

<u>Agricultural Biomass</u>

Agricultural biomass, principally corn stover and other biomass fuels, will be collected off site for delivery to the plant in a baled form. Bales will be delivered to the bale receiving area via semi-trailer trucks.

Bales will be offloaded by mobile equipment and stored or provided directly to the bale choppers for blending with the wood. NGPP Minnesota Biomass, LLC anticipates that there will be approximately 120 days of agricultural biomass for fuel in storage. Bales will be piled in rows similar to the storage rows for the wood

fuel. Like the wood storage area, the storage area for agricultural biomass will be surfaced with class 5 gravel. Bales that are provided to the bale choppers will be sized (chopped) and the material sent to the stacker-reclaimer for blending with wood.

Wood and Blended Fuel Reclamation

Wood and blended fuel will be reclaimed from the stacker-reclaimer areas by over-pile and under-pile reclaimers. Reclaimed fuel will be directed to boiler feed bins located in front of the boilers, without further processing.

Auxiliary Equipment

Air Pollution Control Equipment

Fuel Handling

The fuel handling system is equipped with several dust collection devices which will assist in the minimization of fugitive dust from the processing and transfer of wood and agricultural biomass within the property. Specific points of dust generation such as material receiving, bale sizing, primary screening and oversize reduction, conveyor transfer areas and stack out operations are equipped with dust collection systems. The dust captured is returned to the boiler feed system for combustion in the furnace.

Combustion

The combustion gases will leave the furnace/ boiler through an air heater, an economizer, a mechanical (multiple-cyclone type) particle collector and then through a final dust collector. These devices will collect ash entrained in the flue gas before the flue gas is exhausted from the 150-foot high stack.

Nitrogen oxide (NOx) emissions will be controlled by a Selective Non-Catalytic Reduction (SNCR) system. The SNCR will inject aqueous ammonia or another reagent, such as urea, down stream of the combustion zone to chemically react with the oxides of Nitrogen (NOx) to form Nitrogen and water. The SNCR system will include a 20,000-gallon tank for reagent storage as well as injection equipment and associated controls. The reagent will be delivered by truck to the reagent storage tank.

Ash Handling System

The combustion process will generate ash as two discrete products, bottom ash and fly ash. Bottom ash will come directly from the boiler grate and be water quenched and transferred by closed conveyor to a holding silo in the ash storage building for further processing and ultimate disposal. Fly ash is the ash recovered from the combustion flue gasses by mechanical (cyclone) collectors and final particulate collectors. Fly ash will be transferred to the ash storage building by conveyor.

The facility will have ash storage on site. The ash will be periodically removed from the on-site storage to be land-applied as a soil enhancer or disposed of off site in an appropriate disposal facility.

Gas Hookup

Because the plant may use natural gas as a fuel for startup and shutdown, the plant may require a short tap from the Northern Natural Gas pipeline that crosses the plant property (Site 1) or passes near the property (Site 2). Either Northern Natural Gas or NGPP Minnesota Biomass, LLC will obtain a state or Federal permit for the tap.

Electric Transmission Line:

NGPP Minnesota Biomass, LLC has applied to the Midwest Independent System Operator (MISO) for connection to the Xcel Energy transmission system. NGPP Minnesota Biomass, LLC anticipates that a

transmission line will be constructed to connect the project to Xcel Energy's transmission grid in the vicinity of the Loon Lake substation. The ownership and maintenance responsibility for the transmission line will be determined at a later time. The line will be designed, operated and maintained to comply with MISO transmission standards pursuant to an Interconnection Agreement between MISO, NGPP Minnesota Biomass, LLC, and Xcel Energy in a form approved by the Federal Energy Regulatory Commission. Depending upon the actual route, the transmission line will be between one and two miles long. The transmission line owner will apply for either a local or state permit for the transmission line.

Access road and parking:
An asphalt access road will connect the plant to the highway. The access road will lead to vehicle parking for plant personnel and a staging area for fuel delivery. The access road and parking will cover approximately 5.5 acres.

Construction Timing and Schedule
After permits are received construction is scheduled to commence in the fourth quarter 2004 with the final engineering and procurement activities. NGPP Minnesota Biomass, LLC anticipates that construction will be completed by December 2006 and commercial operation will begin upon completion.

c. Explain the project purpose; if the project will be carried out by a governmental unit, explain the need for the project and identify its beneficiaries.

NGPP Minnesota Biomass, LLC is a wholly-owned subsidiary of NGP Power Corp. NGP Power Corp. develops and acquires power generation projects in the United States. NGP Power Corp. is based in Irving, Texas and has operations in New York, Texas, California and Minnesota, including a 20 MW wood-fired generating station in New York.

The project is being built to meet the existing and expected electric demand of Xcel Energy. The project arose as a result of Minnesota laws enacted in 1994 requiring Xcel Energy to contract for 125 MW of power from biomass fueled projects. The project was selected in a bid process conducted pursuant to procedures approved by the Minnesota Public Utilities Commission. This project supplies a portion of biomass fueled electric power necessary for Xcel Energy to meet its biomass mandate.

d. Are future stages of this development including development on any outlots planned or likely to happen?
__Yes X No

If yes, briefly describe future stages, relationship to present project, timeline and plans for environmental review.

No future stages of this development are planned.

e. Is this project a subsequent stage of an earlier project? __Yes X No

If yes, briefly describe the past development, timeline and any past environmental review.
This project is not a subsequent stage of an earlier project.

7. **Project magnitude data**
Total project acreage 99.45/79 acres.
Number of residential units: unattached N/A **attached** N/A **maximum units per building** N/A

Commercial, industrial or institutional building area (gross floor space): total square feet N/A
Indicate areas of specific uses (in square feet):

Table 7-1
Commercial, industrial or institutional building area –Areas of specific use

Use	Square Footage	Acres
Generation Building		
Boiler building	18,000	0.41
APC Enclosure	8,000	0.18
Cooling Tower	5,000	0.12
Ash Storage Building	20,000	0.46
Wood Storage Area *	1,440,000	33
Reclaim Pile (s) – (Both)	80,000	1.84
Stack-out Pile	8,000	0.18
Wood Receiving/Processing Area		
Truck Dumpers	6,000	0.14
Conveyors (typ 20"width)	57,000	1.31
Stacker / Reclaim Conveyors	10,000	0.23
Agricultural Fuel Receiving		
Conveyors	9,000	0.21
Agricultural Fuel Storage *	284,000	6.5
Auxiliary Building(s)		
Maintenance	9,000	0.21
Scale House	500	0.012
Dumper Control Building	500	0.012
Ag. Biomass Control Building**	5,000	0.11
Substation	10,000	0.23
Storage Tanks (Includes dikes)		
Fuel Storage (10,000 Gal)	2,500	0.06
Chemical Storage (20,000 Gal – NO_x Reagent)	2,000	0.05
Water storage (300,000 Gal)	8,000	0.18
Driveway/parking area ***		
Truck Stacking (asphalt)	230,000	5.3
Personnel parking (asphalt)	9,400	0.22
Other- impervious areas	80,000	1.85
Total	**2,301,900**	**52.9**
Utility Corridor	10,400 LF	
Building height	130 Feet	N/A
Stack Height	150 Feet	N/A

Note : Quantities are Approximate-based on concept design only
* Fuel storage areas will be surfaced with class 5 gravel and include the roads between the fuel piles.
** Includes bale processing area
*** Includes access road from highway

Both the boiler house and the stack will be the tallest buildings in the immediate area.

8. **Permits and approvals required.** List all known local, state and federal permits, approvals and financial assistance for the project. Include modifications of any existing permits, governmental review of plans and all direct and indirect forms of public financial assistance including bond guarantees, Tax Increment Financing and infrastructure.

Table 8-1
Required Permits, Approvals & Notices

Agency[1]	Type of Application	Status
Federal		
EPA	Notification of Construction	
FERC	New Gas Pipeline	To be applied for if needed
	Sales Tap Approval	To be applied for if needed
USFWS	Threatened and Endangered Species Review	Completed
US Army Corps of Engineers	Section 404 Permit	To be applied for if needed
FAA	Notice of Construction/Alteration	To be filed
State of Minnesota		
Environmental Quality Board	Environmental Assessment Worksheet	Data Portion Supplied
	HVTL Routing Permit	To be applied for if needed
	Pipeline Permit	To be applied for if needed
MPCA	Above ground tank registration	To be applied for
	NPDES Stormwater and Industrial Discharge Permit	To be applied for
	Spill Prevention Control and Countermeasure Plan	To be filed
	Air Permit	To be applied for
	General Storm-Water Permit for Construction Activity including a Temporary Erosion and Sediment Control Plan and Permanent Erosion and Sediment Control Plan	To be applied for by construction contractor
	Section 401 Permit	To be applied for if needed
State Board of Electricity	Electrical Inspection	To be applied for
MDH	Public Water Supply Plan Review	To be applied for if needed
	Plant Plumbing Plan Review	To be applied for
	Well Sealing Permit	To be applied for if needed
MnDOT	Road Access Permit	To be applied for if needed
	Road Crossing Permit	To be applied for if needed
	Road Construction Permit	To be applied for if needed
MN-DNR	Ground Water Appropriation Permit	To be applied for if needed
	Natural Heritage and Nongame Database Review	Completed
MN BWSR	Wetland Conservation Act Approval	To be applied for if needed
MN-SHPO	Cultural Resources Review	Completed
Local/Other		
Waseca County	Conditional Use Permit (CUP) or PUD	To be applied for if needed
	Zoning and Building Permits	To be applied for if needed
City of Waseca	Conditional Use Permit	To be applied for if needed
	Zoning and Building Permits	To be applied for if needed
Xcel Energy/MISO/FERC	Interconnection Agreement	Applied for

[1]Agency
EPA = Environmental Protection Agency
MN-DNR = Minnesota Department of Natural Resources
MDH = Minnesota Department of Health
MnDOT = Minnesota Department of Transportation

MN-SHPO = Minnesota State Historic Preservation Office
USFWS = U.S. Fish and Wildlife Service
FAA = Federal Aviation Administration
MPCA = Minnesota Pollution Control Agency
FERC = Federal Energy Regulatory Commission

9. **Land use. Describe current and recent past land use and development on the site and on adjacent lands. Discuss project compatibility with adjacent and nearby land uses. Indicate whether any potential conflicts involve environmental matters. Identify any potential environmental hazards due to past site uses, such as soil contamination or abandoned storage tanks, or proximity to nearby hazardous liquid or gas pipelines.**

   Site 1 is located in the southwest corner of section 13, Township 107 North, Range 23 West in St. Mary Township, Waseca County Minnesota. The site is shown on the U.S. Geological Survey 7.5- minute quadrangle map in Figure 2 and on an aerial photograph in Figure 4a. The site is bordered to the west by Waseca County Road 27, and to the south by Waseca County Road 57. The Waseca airport, the Waseca Water Treatment Plant and an industrial wastewater pond for a vegetable processing plant are all west of the site. The site is owned by a food processor that maintains the site as a field for canary grass. The site owner irrigates the site with wastewater from vegetable processing as part of its wastewater treatment for process water. The site is surrounded by industrial and institutional uses. The City of Waseca may annex the site at some time in the future. If that happens, the site and surrounding land uses are expected to be zoned for industrial uses. The proposed project would be compatible with other adjacent land uses.

   Site 2 is located in section 19, Township 107 North, Range 22 West in Woodville Township. The site is bordered to the west and north by agricultural fields, to the east by Waseca County Road 4, and to the south by Waseca County Road 9. The nearest home is approximately 70 feet from the western border of the site. Portions of the site are used as a loading facility and as cultivated farmland. The site also contains an abandoned farmstead and four excavated wetlands. Site 2 is zoned for highway commercial uses and is surrounded by agricultural fields and some rural residential lots. The site is shown on the U.S. Geological Survey 7.5- minute quadrangle map in Figure 2 and on an aerial photograph in Figure 4b.

   The Minnesota Department of Transportation (MnDOT) plans to construct a bypass of Waseca as part of its reconstruction of T.H. 14 between 2008 and 2013, depending upon funding availability. The proposed bypass will pass south of Site 1 and north of Site 2. The reroute is likely to make the area surrounding both sites more attractive to commercial and industrial uses.

   An 8-inch Northern Natural Gas pipeline runs diagonally through Site 1 and runs approximately ¼ mile north of Site 2. NGPP Minnesota Biomass, LLC will tap into the pipeline in order to use natural gas for a startup fuel. For industrial facilities such as a power plant, proximity to a natural gas pipeline is not considered to be an environmental hazard.

   No potential conflicts involving environmental matters are known to exist on the site at this time. No potential environmental hazards due to past site uses, such as soil contamination or abandoned storage tanks are believed to exist.

10. **Cover types. Estimate the acreage of the site with each of the following cover types before and after development:**

Table 10-1
Cover Types

Cover Type	Site 1		Site 2	
	Before (acres)	**After (acres)**	**Before (acres)**	**After (acres)**
Types 1-8 wetlands	0.29	0	3.56	0
Wooded/forest	0.06	0	3.05	0
Brush/Grassland	91.00	37.93	4.21	25.93
Cropland			65.05	
Lawn/landscaping			1.75	
Water features		0.17		0.17
Impervious surfaces (including gravel)		52.9	1.38	52.9
TOTAL	91.00	91.00	79.0	79.0

If **Before** and **After** totals are not equal, explain why:

11. **Fish, wildlife and ecologically sensitive resources**

a. Identify fish and wildlife resources and habitats on or near the site and describe how they would be affected by the project. Describe any measures to be taken to minimize or avoid impacts.

Existing Natural Habitat and Wildlife
Rural areas of Waseca County are primarily agricultural lands and natural habitat is in general limited to fencerows, roadside ditches, wetlands, and areas of non-maintained grasses and shrubs. The habitat within Site 1 is owned by an food processor that irrigates the site with water used in vegetable processing and maintains the sites as a monotypic grassland. The grassland on Site 1 may be used forage and/or shelter by mammals, birds, reptiles, and amphibians. The habitat within Site 2 is agricultural row crops, an abandoned farmstead with windbreak trees, and four excavated wetland areas.

Both sites have the potential to provide habitat for small mammals such as red fox, eastern cottontail, striped skunk, raccoon, thirteen-lined ground squirrel, meadow vole, and white-footed mice. White-tailed deer, an economically important species, may be present in the area. Deer have a strong affinity for agricultural crops and use grasslands, farm woodlots, wetlands, and stream bottoms for shelter. The agricultural areas associated with the site would potentially provide habitat for bird species that include red-tailed hawk, eastern kingbird, American crow, field sparrow, bobolink, red-winged blackbird, meadowlark, horned lark, American goldfinch, and house sparrow. The site has the potential to provide habitat for upland species of reptiles and amphibians such as hognose snake, milk snake, bullsnake, garter snake, and American toad.

The native vegetation of the area was sugar maple-basswood deciduous forest that was dominated by elm, basswood, sugar maple, bur oak, ironwood, red oak, and aspen. The understory included woodland wildflowers such as hepatica, bloodroot, trillium, Dutchman's breeches, and spring beauty. Both sites are

currently used as agricultural land. Site 1 had largely been cleared of trees. Site 2 has a wood lot in the east central part of the site.

Impacts
Due to the fact that the land is already disturbed by agricultural activities, and that the Minnesota Department of Natural Resources (MN-DNR) did not identify any state- or federally-listed threatened or endangered species at either site. NGPP Minnesota Biomass, LLC does not anticipate that the project will have a significant impact upon the species present in the project area.

Little wildlife habitat will be permanently lost. All wildlife species that may be displaced are considered "common" in Minnesota, and their displacement would not be detrimental to their populations.

b. Are any state-listed (endangered, threatened or special concern) species, rare plant communities or other sensitive ecological resources such as native prairie habitat, colonial waterbird nesting colonies or regionally rare plant communities on or near the site? ___Yes _X_ No

If yes, describe the resource and how it would be affected by the project. Indicate if a site survey of the resources has been conducted and describe the results. If the DNR Natural Heritage and Nongame Research program has been contacted give the correspondence reference number: ERDB 20031046. Describe measures to minimize or avoid adverse impacts.

The MN-DNR Natural Heritage Program and the USFWS were asked to review the project area within a 1-mile radius for known occurrences of federal- and state-listed threatened and endangered species and other significant natural features.

A response letter from the MN-DNR dated May 27, 2003 is included with other agency correspondence in Appendix A. The MN-DNR reviewed the Natural Heritage database, and determined that there are no known occurrences of rare species or natural communities at the project site, although there are 5 known occurrences of threatened and rare plant species in the search area that have been identified along the railroad right-of-way located approximately ½ mile north of Site 1. Since the project will not disturb the railroad right-of-way no impacts to these species are anticipated.

The USFWS did not comment on the project.

12. **Physical impacts on water resources. Will the project involve the physical or hydrologic alteration — dredging, filling, stream diversion, outfall structure, diking, and impoundment — of any surface waters such as a lake, pond, wetland, stream or drainage ditch? _X_ Yes ___ No**

If yes, identify water resource affected and give the DNR Protected Waters Inventory number(s) if the water resources affected are on the PWI. Describe alternatives considered and proposed mitigation measures to minimize impacts.

Site 1: The site was delineated for wetlands on June 11, 2003 and reviewed with the Waseca County Soil and Water Conservation District (SWCD) on July 10, 2003. According to the wetland delineation for the project area, there are three wetlands at the site (Figure 4a).

- Wetland 1 is a Type 2 (PEMB) wetland that is 0.06 acres.
- Wetland 2 is located west of Wetland 1 and is a Type 2 (PEMB) wetland that is 0.01 acres.
- Wetland 3 is located in the southwestern portion of the site and is a Type 2 (PEMB) wetland that is 0.22 acres.

There are no MN-DNR Public Waters on the proposed site. The project has the potential to alter wetlands at the site, but will not involve alteration of any streams or lakes.

Site 2 - The site was delineated for wetlands on June 11, 2003 and reviewed with the Waseca County Soil and Water Conservation District (SWCD) on July 10, 2003. According to the wetland delineation for the project area, there are eight wetlands at the site (Figure 4b).

- Wetland 4 is in the location of a former excavated pond that was filled in approximately 15 years ago per the SWCD. The wetland is a Type 2/3 (PEMB/C) wetland that is 0.70 acres.
- Wetland 5 is a farmed Type 2 (PEMB) wetland that is 0.14 acres.
- Wetland 6 is an excavated ditch in hydric soils that is a Type 2 (PEMB) wetland that is 0.74 acres.
- Wetland 7 is farmed Type 2 (PEMB) wetland that is 0.17 acres. This wetland extends onto the adjacent property located to the west.
- Wetland 8 is farmed Type 2 (PEMB) wetland that is 0.12 acres.
- Wetlands 9 and 10 are hydrologically contiguous but have different vegetative cover. Wetland 9 is a Type 2 (PEMB) wetland that is 0.50 acres. Wetland 10 is a Type 3/6 (PEM/SSC) wetland that is 1.17 acres.
- Wetland 11 is farmed Type 2 (PEMB) wetland that is 0.02 acres.

There are no MN-DNR Protected Waters on the proposed site. The project may alter wetlands at the site, but will not involve alteration of any streams or lakes. If wetlands are affected all appropriate permits and approvals will be obtained.

13. **Water use. Will the project involve installation or abandonment of any water wells, connection to or changes in any public water supply or appropriation of any ground or surface water (including dewatering)? X Yes __No**

If yes, as applicable, give location and purpose of any new wells; public supply affected, changes to be made, and water quantities to be used; the source, duration, quantity and purpose of any appropriations; and unique well numbers and DNR appropriation permit numbers, if known. Identify any existing and new wells on the site map. If there are no wells known on site, explain methodology used to determine.

Water Use

Three sources of water are being evaluated for use in the project. The project may use some combination of the following: well water from a well to be constructed on site; city water; or effluent from the Waseca Wastewater Treatment Plant (WWTP). If effluent is used, either well or city water will be necessary to supplement effluent flow during certain periods.

Some combination of well water, city water and effluent may be used for process water at the facility. WWTP effluent could be used for cooling tower makeup and possibly for other process water. During periods of low effluent flow the cooling water makeup will be augmented by well water or city water. Maximum and minimum effluent flow are estimated to be approximately 824 GPM / 300 GPM. The wastewater treatment plant would deliver the effluent to the site.

Well water (Jordan aquifer) or city water (also from the Jordan aquifer) will be used for plant service water (sanitary, potable, demineralized water makeup, fire protection) and, as noted above, augmentation of the cooling tower makeup. Normal flow is estimated to be 57 GPM. When used for cooling tower augmentation in place of effluent the estimated maximum flow could be 592 GPM. The precise location of the well is unknown at this time.

Hydrogeological information.
Both sites lie along the northeastern boundary of the Blue Earth River Watershed in Waseca, Minnesota. Aquifers in the watershed are found in underlying Pleistocene glacial deposits, Ordovician and Cambrian sedimentary rocks, and Pre-Cambrian crystalline rocks. In the vicinity of the project area, many wells are completed in the sedimentary units. The Jordan, St. Peter and Galena are the most reliable aquifers in the central and eastern parts of the watershed.

The shallow aquifer lies in the Pleistocene glacial deposits that cover almost the entire watershed. The glacial deposits consist of predominately till, an unsorted unstratified mixture of silt, clay, sand and gravel. Sand and gravel lenses are commonly found within the till and are widely accessed. The sand and gravel lenses are commonly thin and discontinuous, but provide an adequate supply for domestic use. In the western section, many wells are found in the shallow aquifer, while eastward the affinity is towards bedrock aquifers. The thickness of the glacial deposits near the subject property ranges from 100 to 200 feet. Groundwater movement locally is towards river valleys discharging into the rivers, while regionally the flow is northwest towards Mankato.

The Jordan aquifer is the primary focus for water supply for the project. Near the site, younger bedrock and glacial deposits overlie the Jordan sandstone. The elevation of the top of the bedrock is approximately 500 feet above mean sea level (ft-amsl). Water in the Jordan aquifer moves into the area from the southeast, and is recharged locally by leakage from overlying formations. A groundwater divide exist in the aquifer to the west within Waseca County. The project site lies in the eastern portion that drains towards the Cannon River Watershed. The potentiometric surface of groundwater in the Jordan Aquifer is at an elevation of approximately 1000 ft-amsl. Groundwater flow is to the northeast. The water supply in the Jordan for industrial and municipal use is more than adequate.

Existing wells
The *Minnesota County Well Index* shows a total of 14 water wells were located within 1.5 miles of the proposed project sites. The majority of the wells are used for municipal or industrial supply. Four of the wells were completed in the Jordan aquifer, but three were drilled as test wells. The remaining wells were mainly completed in the St. Peter and Prairie du Chien formations.

An unrecorded well was observed on Site 2. This well will be investigated further and sealed in accordance with Minnesota Department of Health Rules if the site is developed.

14. **Water-related land use management district. Does any part of the project involve a shoreland zoning district, a delineated 100-year flood plain, or a state or federally designated wild or scenic river land use district?**
__Yes _X_ No

If yes, identify the district and discuss project compatibility with district land use restrictions.

15. **Water surface use. Will the project change the number or type of watercraft on any water body? __Yes X_ No**
If yes, indicate the current and projected watercraft usage and discuss any potential overcrowding or conflicts with other uses.

16. **Erosion and sedimentation. Give the acreage to be graded or excavated and the cubic yards of soil to be moved:**
acres TBD; cubic yards TBD .

Both of the sites under consideration are fairly level with slopes of less than 5 percent (see tables in Question 19b). Although topsoil on most of the site will be disturbed once construction begins, the amount of earth moved is not anticipated to be very extensive. The area covered by the plant buildings (approximately 2 acres) and roadway (approximately 5.5 acres) will be cut below the organic material and filled with engineered fill to support the foundations required for these facilities. The area used for fuel storage (approximately 45 acres) will be graded to allow stormwater to drain to an on-site evaporation/holding pond. A detailed grading plan will be completed during the detailed project design phase.

Describe any steep slopes or highly erodible soils and identify them on the site map. Describe any erosion and sedimentation control measures to be used during and after project construction.

Both sites are on relatively flat terrain, with a few rolling hills. No highly erodible soils or steep slopes are located within the project area. One area of potentially highly erodible land is located in the northeast corner of Site 2 (see figure 5b). Lester Loam (6-12% slopes, eroded (L80C2) is the only soil unit within the project area that can be characterized as erodible. See Figure 5 for mapped soils within the project sites.

Erosion control and sedimentation measures will follow the MPCA Best Management Practices (BMPs) outlined in the manual *Protecting Water Quality in Urban Areas* and the MPCA's requirements for the NPDES construction permit. Typical BMPs that will be used during construction may include:

- installation of silt fences at construction perimeters, installed before excavation and grading and maintained until stabilization of soils is achieved;
- use of bale checks where exposed soils along slopes will require surface water runoff retention and soil stabilization;
- areas not planned to be paved or built on will be mulched and planted in a timely manner to reduce erosion and improve seed germination.

17. **Water quality: surface water runoff**

a. Compare the quantity and quality of site runoff before and after the project. Describe permanent controls to manage or treat runoff. Describe any stormwater pollution prevention plans.

Site 1 is currently used as a grass field used for disposal of process wastewater from an agricultural processing facility. The predominant cover type is reed canary grass. Site 2 is used primarily as an agricultural field. Under current conditions, each site is entirely self-contained and has no runoff.

The proposed land use includes placing crushed aggregate over much of the site to allow for loading and unloading of wood chips and agricultural biomass fuels. This will create a virtually impervious surface over most of the site.

(Site 1) Stormwater from the site may be routed to an evaporation/holding pond to be constructed on the site, or may be routed to the existing industrial wastewater pond west of the site. If a new pond is constructed, water from the new pond may be pumped to the existing industrial wastewater pond, may be land applied, or it may be discharged to the Le Sueur River. Any necessary permits will be obtained.

(Site 2) Stormwater from this site will be routed to an evaporation/holding pond to be constructed in the

southwest portion of the site. Water from the new pond will be either land applied or discharged to the Le Sueur River. Any necessary permits will be obtained.

Wood chips, corn stover and other agricultural biomass are the only materials expected to come into contact with stormwater. The wood chips will be composed of untreated wood, therefore, there is no expectation of any toxic materials leaching from the wood. The corn stover has, and other agricultural biomass fuels may have, the potential to add nitrates to onsite stormwater. Any stormwater that comes into contact with the fuel will drain to an evaporation/holding pond on-site and will be characterized and, if needed, treated prior to discharge.

During construction, an erosion control plan will be implemented to reduce the likelihood of sediments being transported to adjacent surface waters. The erosion control plan may consist of one or more of the following: silt fences, bale checks, temporary cover seeding, stormwater detention basin and grit traps. After construction is completed, a permanent stormwater control plan will be implemented.

b. Identify routes and receiving water bodies for runoff from the site; include major downstream water bodies as well as the immediate receiving waters. Estimate the impact of runoff on the quality of receiving waters.

Neither of the sites under consideration currently have surface discharge locations. Each site is underlain with a closed drain tile system. Water (precipitation or land applied wastewater) percolates into the ground and is intercepted by the drain tile where it is either routed for reapplication, to a holding pond adjacent to Site 1, or allowed to discharge. When allowed to discharge, water from Site 1 is sent to County Ditch #45 and site 2 to County Ditch # 39, both of which ultimately discharge to the Le Sueur River.

Any stormwater that comes into contact with the fuel will be characterized and, if needed, treated prior to discharge. Therefore, no impact to the quality of receiving waters is anticipated.

18. **Water quality: wastewaters**

a. Describe sources, composition and quantities of all sanitary, municipal and industrial wastewater produced or treated at the site.

Wastewater will be generated from the following sources:

Table 18-1
Wastewater Generation

	Effluent & Well/City Water		Well/City Water Only	
Wastewater Source	**gpm**	**Million gpy**	**gpm**	**Million gpy**
Cooling Tower Blowdown	411.0	216.0	136.0	71.5
Sanitary	1.0	0.5	1.0	0.5
Plant Wash & Misc.	13.0	6.8	13.0	6.8
Demineralization	3.5	1.8	3.5	1.8
Oil/Water Separation	2.0	1.1	2.0	1.1
Total Discharge	**430.5**	**226.2**	**155.5**	**81.7**

The composition of the wastewater will depend upon whether the plant uses a mixture of effluent and well water or only well water.

Any wastewater discharged will comply with all PCA permitting requirements.

b. Describe waste treatment methods or pollution prevention efforts and give estimates of composition after treatment. Identify receiving waters, including major downstream water bodies, and estimate the discharge impact on the quality of receiving waters. If the project involves on-site sewage systems, discuss the suitability of site conditions for such systems.

There is no treatment anticipated for the wastewater generated by the facility. Wastewater will be discharged to an extension of the City of Waseca's sewerage system. After treatment the Waseca water treatment discharges the water to the Le Sueur River.

The amount of water discharged to the Waseca WWTP depends upon the source of the water used at the plant. If the plant uses a mixture of wastewater effluent and well and/or city water, the discharge quantity is estimated to be an average of 432 GPM with a maximum discharge of 584 GPM. If effluent is not used for process water, the discharge quantity is estimated to be an average of 156 GPM with a maximum discharge of 308 GPM.

c. If wastes will be discharged into a publicly owned treatment facility, identify the facility, describe any pretreatment provisions and discuss the facility's ability to handle the volume and composition of wastes, identifying any improvements necessary.

Wastewater will be discharged to the Waseca wastewater treatment plant (WWTP) where treatment will occur.

Waseca wastewater is currently discharged to the city's WWTP. The WWTP nominal design capacity is noted as 2.3 Million Gallons per Day (MGD). Current information provided by the City indicates that the current influent flow rate averages 1.6 MGD. NGPP Power Minnesota Biomass, LLC is in the process of confirming with the city of Waseca that any discharge from the plant to the Waseca WWTP will not impact the operation of the WWTP.

d. If the project requires disposal of liquid animal manure, describe disposal technique and location and discuss capacity to handle the volume and composition of manure. Identify any improvements necessary. Describe any required setbacks for land disposal systems.

Not applicable.

19. **Geologic hazards and soil conditions**

Site 1
Approximate depth (in feet) to ground water: approximately 10'
minimum N/A **average to bedrock:** 190' (950 ft AMSL)

Depth to groundwater information is limited based on information available for the shallow aquifer. Depth to groundwater may be lesser or greater depending on proximity to wetland areas and surface water sources.

Describe any of the following geologic site hazards to ground water and also identify them on the site map: sinkholes, shallow limestone formations or karst conditions. Describe measures to avoid or minimize environmental problems due to any of these hazards.

The project site lies in an area underlain by carbonate bedrock. The landscape is described as "Covered Karst" where the carbonate bedrock is overlain by over 100 feet of glacial material. Relatively few karstic features (i.e. sinkholes, caves, springs), if any, are observed in such areas. Higher occurrences of karst landforms may be observed in areas where the sediment cover approaches less than 50 feet (not likely in the project area).

Site 2

a. Approximate depth (in feet)

to ground water: approximately 20' **minimum** N/A **average**
to bedrock: 130 ' (1020 ft AMSL)

Depth to groundwater information is limited based on information available for the shallow aquifer. Depth to groundwater may be lesser or greater depending on proximity to wetland areas and surface water sources.

Describe any of the following geologic site hazards to ground water and also identify them on the site map: sinkholes, shallow limestone formations or karst conditions. Describe measures to avoid or minimize environmental problems due to any of these hazards.

The project site lies in an area underlain by carbonate bedrock. The landscape is described as "Covered Karst" where the carbonate bedrock is overlain by over 100 feet of glacial material. Relatively few karstic features (i.e. sinkholes, caves, springs), if any, are observed in such areas. Higher occurrences of karst landforms may be observed in areas where the sediment cover approaches less than 50 feet (not likely in the project area).

b. Describe the soils on the site, giving NRCS (SCS) classifications, if known. Discuss soil granularity and potential for groundwater contamination from wastes or chemicals spread or spilled onto the soils. Discuss any mitigation measures to prevent such contamination.

A soils map is included (Figures 5a and 5b) for reference. The tables below represent the soils mapped within the project area. Neither site has a high potential for groundwater contamination. The mapped soils on the site are generally loams with moderate permeability.

Table 19-B1
Existing Soils Site 1

Map Unit	Soil Name	Soil Classification	Drainage	Permeability
U3B	Udorthents, Loam (Cut and Fill Land), 1-6% slopes	N/A	N/A	
L15A	Klossner, Okoboji, and Glencoe Soils, ponded, 0-1% slopes	**Klossner**: Loamy, mixed, euic, mesic Terric Haplosaprists **Okoboji**: Fine, smectitic, mesic Cumulic Vertic Endoaquolls **Glencoe**: Fine-loamy, mixed, superactive, mesic Cumulic Endoaquolls	Very poorly drained	**Klossner, Okoboji, and Glencoe:** Moderate to Moderately Slow; **Klossner component:** Moderately Slow to Moderately Rapid in organic layers
L79B	Clarion Loam, 2-5% slopes	Fine-loamy, mixed, superactive, mesic Typic Hapludolls	Moderately well drained	Moderate
L83A	Webster Clay Loam, 0-2% slopes	Fine-loamy, mixed, superactive, mesic Typic Endoaquolls	Poorly drained, commonly artificially drained	Moderate
L84A	Glencoe Clay Loam, depressional, 0-1% slopes	Fine-loamy, mixed, superactive, mesic Cumulic Endoaquolls	Very poorly drained	Moderate to Moderately Slow
L85A	Nicollet Clay Loam, 1-3% slopes	Fine-loamy, mixed, superactive, mesic Aquic Hapludolls	Somewhat poorly drained	Moderate
L90A	Le Sueur Clay Loam, 0-3% slopes	Fine-loamy, mixed, superactive, mesic Aquic Argiudolls	Somewhat poorly drained	Moderate
L107A	Canisteo-Glencoe, depressional complex 0-2% slopes	**Canisteo:** Fine-loamy, mixed, superactive, calcareous, mesic Typic Endoaquolls **Glencoe**: Fine-loamy, mixed, superactive, mesic Cumulic Endoaquolls	Poorly drained and very poorly drained	Moderate

Table 19-B2
Existing Soils Site 2

Map Unit	Soil Name	Soil Classification	Drainage	Permeability
L36A	Hamel, Overwash-Hamel Complex, 1-4% slopes	Fine-loamy, mixed, superactive, mesic Typic Argiaquolls	Poorly drained to Somewhat poorly drained	Moderately slow
L80C2	Lester Loam, 6-12% slopes	Fine-loamy, mixed, superactive, mesic Mollic Hapludalfs	Well-drained	Moderate
L83A	Webster Clay Loam, 0-2% slopes	Fine-loamy, mixed, superactive, mesic Typic Endoaquolls	Poorly drained, commonly artificially drained	Moderate
L85A	Nicollet Clay Loam, 1-3% slopes	Fine-loamy, mixed, superactive, mesic Aquic Hapludolls	Somewhat poorly drained	Moderate
L90A	Le Sueur Clay Loam, 0-3% slopes	Fine-loamy, mixed, superactive, mesic Aquic Argiudolls	Somewhat poorly drained	Moderate
L107A	Canisteo-Glencoe, Depressional Complex, 0-2% slopes	**Canisteo:** Fine-loamy, mixed, superactive, calcareous, mesic Typic Endoaquolls **Glencoe**: Fine-loamy, mixed, superactive, mesic Cumulic Endoaquolls	Poorly drained and very poorly drained	Moderate
L113B	Reedslake Loam, 2-5% slopes	Fine-loamy, mixed, superactive, mesic Typic Argiudolls	Well drained	Moderate
M-W	Water, Miscellaneous	N/A	N/A	N/A

20. **Solid wastes, hazardous wastes, storage tanks**

a. Describe types, amounts and compositions of solid or hazardous wastes, including solid animal manure, sludge and ash, produced during construction and operation. Identify method and location of disposal. For projects generating municipal solid waste, indicate if there is a source separation plan; describe how the project will be modified for recycling. If hazardous waste is generated, indicate if there is a hazardous waste minimization plan and routine hazardous waste reduction assessments.

Solid waste produced during construction will be disposed of off-site. The contractor will be responsible for solid waste disposal. The solid waste will include normal construction debris such as, scrap wood, plastics, wallboard, packing material, cardboard, scrap metals and electrical wires. Recycling of construction waste materials will be the responsibility of the contractor. No hazardous waste is anticipated but if generated, it will be the responsibility of the contractor to dispose of properly.

Ash that is generated from fuel combustion will be collected and stored for a period of time on site in an ash storage building. The ash will be removed periodically and re-used as a soil enhancer or disposed at an off-site solid waste disposal facility.

b. Identify any toxic or hazardous materials to be used or present at the site and identify measures to be used to prevent them from contaminating groundwater. If the use of toxic or hazardous materials will lead to a regulated waste, discharge or emission, discuss any alternatives considered to minimize or eliminate the waste, discharge or emission.

The facility will generate very small quantities of hazardous wastes that may include fluorescent lights, lubricating oil, mineral oil, ethylene glycol, de-greasers, cleaning solvents and batteries. It is anticipated that the facility would be classified as a "Very Small Quantity Generator" of hazardous wastes.

c. Indicate the number, location, size and use of any above or below ground tanks to store petroleum products or other materials, except water. Describe any emergency response containment plans.

In addition to a water storage tank NGPP Minnesota Biomass, LLC will construct two above ground storage tanks at the facility: a 10,000 gallon tank to store fuel (probably No. 2 diesel) for the plant's vehicle fleet; and a 20,000 gallon tank to store reagent for use in the SNCR NOx reduction.

The 10,000-gallon fuel storage tank will have secondary containment to manage possible spills. Fuel pumps for vehicle filling will be located within the containment area. The tank will be replenished with fuel delivered by truck and refilling will take place within the containment area.

The 20,000-gallon tank to store reagent for use in the SNCR NOx reduction will also have secondary containment. It is anticipated that deliveries of aqueous ammonia or another reagent will occur via bulk tank truck.

NGPP Minnesota Biomass, LLC will register both of these tanks with the MPCA and ensure that all labeling, construction, inspection and other requirements for above-ground storage tanks are met.

No below ground storage tanks are anticipated.

21. **Traffic. Parking spaces added** 20 **Existing spaces (if project involves expansion)** N/A**.**
Provide an estimate of the impact on traffic congestion on affected roads and describe any traffic improvements necessary. If the project is within the Twin Cities metropolitan area, discuss its impact on the regional transportation system.

Construction Traffic

NGPP Minnesota Biomass, LLC estimates that construction at the site will last approximately 18 months. The size of the construction workforce will vary according to the work progress. The average work force is anticipated to be about 75 persons, peaking at approximately 250 persons when the project is between 75% and 90% complete.

Construction personnel may be expected to generate an average of 50 two-way vehicle trips per day during the workweek. The majority of these personnel vehicle trips will occur during the morning hours of 6:30 AM and 8:00 AM and the evening hours 4: PM and 6:00PM. During the peak construction period daily two-way vehicle trips may be about 175.

The transportation of construction materials to the site will generally peak with the construction workforce. It is expected that the transport traffic will be spread over the workday between the hours of 7:00 AM and 5:00 PM.

Operations Traffic

The power plant portion of the facility will operate twenty-four hours per day seven days per week (24/7).

Two types of traffic generation associated with the facility operations are expected: (1) Daily workforce and (2) Fuel delivery. The daily workforce is expected to total of approximately 20 people per 24-hour period. Assuming a conservative generation rate of two daily vehicle trips per employee, an additional 40 vehicle trips per day would be added to the surrounding road network. The workforce trips are expected to coincide with shift change hours. The roadways surrounding either site are currently operating with adequate reserve capacity to accommodate the additional trips with little or no perceived impact on traffic operations.

The fuel handling and receiving operations are expected to be truck-traffic (typically multi-axle and/or semi-combination vehicles) operating on a 24-hour per day, 7-day per week basis. The frequency of trucks is dependent on the demand of materials and the available payload of each specific vehicle. An average flow of three to five semi-combination vehicles per hour is anticipated. Peak fuel receiving is anticipated to occur between the hours of 6:00 AM and 5:00 PM. The origin of loaded trucks and destination of empty trucks depends upon the location of the fuel source.

Ash removal is anticipated to generate up to three round trip semi-combination vehicle loads per day between 7:00 AM and 5:00 PM.

For purposes of analysis, the location of the fuel source was assumed to be accessible via the Trunk Highway (T.H.) system. In the State of Minnesota, Trunk Highways are constructed to accommodate year-round truck loading and are connected in a system such that once vehicles are on the system, all other trunk highways in the State are accessible from the system.

Waseca is served by two Trunk Highways (see Figure 1): T.H. 14 runs east-west and connects to I-35 in Owatonna and T.H. 60 and T.H. 169 in Mankato. T.H. 13 runs north south and connects with T.H. 65 and T.H. 69 in Albert Lea as well as the Metro-area system in the Twin Cities. Private vehicle and truck access to Site 1 can be obtained on County Highway (C.H.) 27 approximately one mile south of current T.H. 14. Private vehicle and truck access to Site 2 is obtained via C.H. 4 approximately one mile west of T.H. 13. Both routes require at-grade crossing of the Dakota, Minnesota & Eastern Railroad.

The Minnesota Department of Transportation (MnDOT) is currently reconstructing T.H. 14 working east from Eagle Lake. The completed highway will provide a new four-lane facility between Mankato and Owatonna, including a full-access controlled bypass of Waseca. MnDOT plans to construct the Waseca bypass between 2008 and 2013, depending upon funding availability. Once completed, T.H. 14 will utilize the new alignment, passing just south of Site 1 and just north of Site 2. However, as an access controlled highway, access to T.H. 14 will only be provided at interchanges with C.H. 2 and T.H. 13. Vehicle and truck access to T.H. 14 from Site 1 will still utilize C.H. 27 near the site, but will then utilize C.H. 2 to access T.H. 14, adding approximately one-half mile of travel distance. Access to Site 2 will be unchanged by the T.H. 14 realignment, with access to T.H. 13 still available via C.H. 4.

Traffic Impacts

Based on the anticipated level of traffic generation and known reserve capacity in the surrounding roadways, the road system surrounding the site(s) is expected to operate at acceptable levels of congestion.

22. **Vehicle-related air emissions. Estimate the effect of the project's traffic generation on air quality, including carbon monoxide levels. Discuss the effect of traffic improvements or other mitigation measures on air quality impacts. Note: If the project involves 500 or more parking spaces, consult *EAW Guidelines* about whether a detailed air quality analysis is needed.**

Off site vehicle-related air emissions will be related to fuel hauling activities. It is anticipated that the vehicle

patterns and delivery locations will be diffuse, with vehicles traveling a variety of roads and directions en-route to the biomass-fueled power plant. Therefore, it is anticipated that off site vehicle related air emissions will be insignificant. Vehicle traffic on site at the biomass-fueled power plant is accounted for in the air emission permit application as fugitive emission sources. Impacts from the fugitive sources are discussed in detail in Question 23.

23. **Stationary source air emissions. Describe the type, sources, quantities and compositions of any emissions from stationary sources of air emissions such as boilers, exhaust stacks or fugitive dust sources. Include any hazardous air pollutants (consult *EAW Guidelines* for a listing) and any greenhouse gases (such as carbon dioxide, methane, nitrous oxide) and ozone-depleting chemicals (chloro-fluorocarbons, hydrofluorocarbons, perfluorocarbons or sulfur hexafluoride). Also describe any proposed pollution prevention techniques and proposed air pollution control devices. Describe the impacts on air quality.**

The primary significant emission unit located at the NGPP Minnesota Biomass power plant will include one 350,000 pound per hour (pph) boiler utilizing an over fire air (OFA) system in conjunction with a moving grate. The associated steam turbine will provide a net electrical generation of 38.5MW. With a maximum net heat rate of 13,700 Btu/kW-hr, the maximum heat input of the boiler/turbine system is not anticipated to exceed 527.5 MMBtu/hr. Wood and blended fuel (wood and agricultural biomass) will be the primary fuel source for the boiler. However, pipeline quality natural gas may be used as a start-up fuel, to provide combustion stability and as a backup fuel in the event of an interruption in the solid fuel supply. The maximum natural gas firing capacity will be 490 MMBTU/hr.

The fuel supply over the 20-year life of the project will be a mixture of locally grown hybrid poplar and willow clones and agricultural biomass. NGPP Minnesota Biomass, LLC anticipates that in the initial stages of plant operation a mixture of biomass materials consisting of approximately 50 percent local closed loop wood, 35 percent urban wood waste and 15 percent agricultural biomass will be combusted.

Other significant emission units located at the NGPP Minnesota Biomass power plant will consist of fuel processing and handling equipment, and one supplemental electrical generator. The generator will have a maximum capacity of 1000 kW and will combust very low sulfur (less than 0.05 percent sulfur) distillate oil.

Fuel processing and handling equipment will consist of a variety of emission points such as fugitive emissions related to vehicle traffic, material receiving, agricultural waste bale sizing, primary screening, oversize reduction, conveyor transfer and stack out operations. The various conveyors and material handling transfer points will be enclosed and operated at negative pressure to control particulate matter emissions wherever possible. Dust collection systems will be associated with the enclosed fuel handling systems to capture particulate matter. Dust captured in the final dust collectors will be returned to the boiler feed system for combustion in the furnace.

Insignificant emission sources proposed to be located at the NGPP Minnesota Biomass power plant will include the following:

- Evaporative emissions from one (1) 10,000-gallon low sulfur distillate fuel oil storage tanks to provide fuel for the black start generator and plant vehicles.
- One (1) diesel-fired fire pump engine with a maximum capacity of 250 horsepower to provide emergency water in the event of a fire.
- One (1) two-cell induced draft counter-current cooling tower for cooling process water will produce a vapor plume on occasion.

No other emission sources will be located at the biomass-fueled power plant.

The biomass-fueled power plant emission units will have the potential to emit nitrogen oxide (NO_x), carbon monoxide (CO), sulfur dioxide (SO_2), volatile organic compounds (VOCs), particulate matter (PM), particulate matter with an aerodynamic diameter equal to or less than 10 micrometers (PM_{10}), and hazardous air pollutants (HAPs).

NO_x will be produced as a result of the boiler combustion process. A Selective Non-Catalytic Reduction (SNCR) system will be used to control emissions of NO_x. The SNCR process involves the injection of a nitrogen-based reducing agent (reagent) such as ammonia (NH_3) or urea to reduce the NO_x in the flue gas to diatomic nitrogen (N_2) and water (H_2O). The SNCR process works without the use of a catalyst. Instead, the SNCR process occurs within the hot gas path of the combustion unit (furnace), which acts as the reaction chamber. Heat from the boiler combustion process provides the energy for the NO_x reduction reaction. Adequate flue gas temperatures and reaction times are required for proper operation of an SNCR system. It is anticipated that with sufficient reagent injection, NO_x control levels of 75% can be maintained. Excess NH_3 emissions (ammonia slip) will not exceed 25 ppm during operation of the SNCR system.

PM and PM_{10} emissions resultant from the combustion process will be controlled through the use of a mechanical (multiple-cyclone type) particle collector used in conjunction with a final dust collector. These devices will collect particulates (ash) entrained in the flue gas prior to exhausting the flue gas to the atmosphere through the 150-foot high exhaust stack. It is anticipated that greater than 90% control will be maintained by the combustion related dust collector systems.

PM and PM_{10} emissions resultant from fuel handling and preparation activities at the NGPP Minnesota Biomass power plant will be controlled through the use of dust collection systems. The various conveyors and material handling transfer points will be enclosed and operated at negative pressure to control particulate matter emissions wherever possible. It is anticipated that dust collection systems will each control particulate emissions to levels greater than 99% efficiency.

Because of the inherently low sulfur content of the fuels proposed for combustion, emissions of SO_2 will not be controlled through the use of post-combustion control technologies. At this level of emission, it is both difficult from a technical perspective and economically infeasible based on the cost effectiveness of SO_2 removed versus SO_2 emitted to further control SO_2 emissions.

Detailed emission calculations are presented in the Air Emission Permit Application for the NGPP Minnesota Biomass power plant that will be reviewed by the MPCA. Emission factors for criteria air pollutants of and HAPs were obtained from the EPA Compilation of Air Pollution Emission Factors, Volume I, Fifth Edition (AP-42), Chapter 1.6, Wood Residue Combustion In Boilers (3/02), and AP-42, Chapter 1.4, Natural Gas Combustion (7/98). In addition to the AP-42 emission factor information, various published data regarding the composition of biomass was reviewed and incorporated as appropriate.

The plant will have the potential to operate year round. All potential to emit calculations are based on peak (worst-case) firing conditions and represent emissions from full-time (8,760 hour per year) operation. Table 23-1 summarizes the potential emissions of criteria and hazardous air pollutants for the NGPP Minnesota Biomass power plant, including insignificant activities.

Table 23-1
Biomass-Fueled Power Plant Potential Emissions (in tons per year)

Emission Source	**NO_x**	**CO**	**SO_2**	**PM/PM_{10}**	**VOC**	**HAPs**
Main Boiler	323	1386	58	69	30	93.6
Emergency Generator & Fire Pump	10.9	2.5	0.3	0.4	0.4	0.01
Fuel Handling	NA	NA	NA	51.7	NA	NA
Totals	334	1389	58.3	121	30.4	93.6

Note: A variety of HAPs are anticipated to be emitted in small quantities. The major source of HAPs is hydrogen chloride with estimated emissions of 43.9 tons per year.

Permits

The EPA, in accordance with the Federal Clean Air Act, has established national ambient air quality standards (NAAQS) for specific pollutants including CO, NO_2, SO_2, ozone (O_3), lead (Pb), and PM_{10}. The Clean Air Act also requires that each state attain and maintain National Ambient Air Quality Standards. In Minnesota the PCA is responsible for ensuring that NAAQS are met.

The NGPP Minnesota Biomass site in Waseca County is located in the Southeast Minnesota-La Crosse (Wisconsin) Interstate Air Quality Control Region and is classified as an "attainment" or "unclassifiable" status with the Federal and State ambient air quality standards. For permitting purposes ambient air quality standards for specific pollutants are met.

Both Federal New Source Review Prevention of Significant Deterioration (PSD) and Minnesota regulations (Minnesota Rules, parts 7000 to 7030) require new sources of air pollution to obtain an air emission permit prior to commencing construction if the project will result in a net increase in potential emissions in excess of specific regulatory thresholds. The NGPP Minnesota Biomass plant will be classified as a major stationary source as emissions of several criteria pollutants are estimated to exceed 250 tpy. As a major stationary source, a permit from the MPCA will be required before construction is begun. As a major stationary source, emissions of any regulated pollutant in excess of significant emissions thresholds presented in 40 CFR 52.21(b)(23) must undergo a Best Available Control Technology (BACT) review. NGPP Minnesota Biomass will undergo a BACT review for NO_x, PM/PM_{10}, SO_2 and CO.

NGPP Minnesota Biomass LLS estimates that the plant's final Boiler stack height will be approximately 150 feet tall, although changes in as-built design may result in slight differences. Exhaust gas flow rates and high temperatures associated with the combustion process, as well as the tall stack height, result in excellent dispersion characteristics. The combination of release height, momentum from the velocity and buoyancy from the high temperatures promotes optimum plume rise and low ambient impacts. As part of the PSD permitting process, NGPP Minnesota Biomass will demonstrate compliance with the applicable NAAQS and federal PSD Class II increments prior to construction using an approved dispersion model. Details concerning the ambient air quality analysis are presented in the PSD permit application for the plant.

24. **Odors, noise, and dust. Will the project generate odors, noise or dust during construction or during operation?**

_X_ Yes __No

If yes, describe sources, characteristics, duration, quantities or intensity and any proposed measures to mitigate adverse impacts. Also identify locations of nearby sensitive receptors and estimate impacts on

them. Discuss potential impacts on human health or quality of life. (Note: fugitive dust generated by operations may be discussed at item 23 instead of here.)

Dust

Construction of the facility is expected to generate dust. However, operations will involve spraying with water over the construction areas and traffic lanes to suppress dust. Therefore, it is not anticipated that fugitive dust will be generated in objectionable quantities.

During operation, sources of dust include wood unloading, truck traffic, and ash handling. Trucks will travel on a paved surface to minimize dust. The wood hogger will be enclosed to minimize dust and noise.

Odors

The project will not generate significant odors during construction. During operation the wood chips stored at the site may generate some odor. The odor will not become a nuisance, as the woodpiles will be turned over periodically to minimize deterioration of the fuel stock. Because the corn stover and other agricultural biomass will be very dry and tightly baled, no odor is anticipated from the agricultural biomass. Combustion of the biomass will not generate odor.

Construction Noise

During construction of the facility, it is anticipated that noise levels will increase in the immediate area surrounding the facility. The actual noise levels on and adjacent to the site will vary considerably depending on the number of pieces of equipment being operated simultaneously and the utilization factor (percent of time in operation and the distance from the equipment to the receptors).

Noise generation estimates for various types of equipment that may be used on the site are given in Table 24-1.

Table 24-1
Typical Construction Equipment Noise Levels

Machine Type	Manufacturer	Model	Noise Level (dBA) at 200'	Noise Level (dBA) at 400'	Noise Level (dBA) at 800'
Crane[A]	American	7260	70	64	58
Crane[A]	American	5299	58	52	46
Backhoe[A]	Link Belt	4000	80	74	68
Backhoe[A]	John Deere	609A	73	67	61
Front Loader[A]	Caterpillar	980	72	66	60
Front Loader[A]	Caterpillar	966	69	63	57
Scraper[A]	Caterpillar	660	80	74	68
Scraper[A]	Caterpillar	641B	73	67	61
Truck[A]	Unspecified	Unknown	79	73	67
Jack Hammer[B]	Unspecified	Unknown	76	70	64
Pile Driver[C]	Unspecified	Unknown	92	87.5	83

[A]Data originated from a federal highway administration study published in 1973.
[B]Data originated from the *Traffic Noise and Vibration Manual*, Illinois Department of Transportation, 1977.
[C]Data originated from the *Handbook of Noise Control*, Cyril M. Harris, 2nd edition.

Existing Noise

On July 16, existing noise levels for the proposed facility sites were measured. Monitoring was conducted using a Quest Model 2900 and a Larson Davis Model 712 Sound Level Meters (SLM). Measurements were made at two sites, the nearest sensitive receptor east of the airport site (Site 1, a residence located immediately to the west of 11952 University Drive) and the nearest sensitive receptor east of the southern site. (Site 2, a residence located at 34144 County Highway 4). At site 1, the sound level meter was located 75 feet from the roadway and at site 2, the SLM was located 125 feet from the roadway (in areas of frequent human activity). Monitoring locations are depicted on the attached site diagram (see Figure 2). The microphones on the meters were positioned approximately five feet above the ground, and both meters were calibrated to 114.0 decibels (dB) prior to starting the monitoring activity.

Meteorological conditions at the sites during the July 16, 2003 monitoring session were: approximately 59 degrees Fahrenheit, mostly sunny skies with no precipitation and light winds at 3 to 5 mph. Background noise sources at both monitoring locations were dominated by traffic on the local roadways. The following data was recorded during the monitoring events.

Table 24-2
Nighttime Monitoring Results

Location	Date and Time of Monitoring	Monitored Results		Minnesota Nighttime Standards	
		L_{10} (dBA)	L_{50} (dBA)	L_{10} (dBA)	L_{50} (dBA)
Site 1 – Residence located immediately to the west of 11952 University Drive	July 16, 2003 6:00 –7:00 am	54	43	55	50
Site 2 – Residence located at 34144 County Highway 4	July 16, 2003 6:00 –7:00 am	58	47	55	50

Nighttime standards are in effect between 10 pm and 7 am (MN Rules, part 7030.0200, subpart 10)

Table 24-3
Daytime Monitoring Results

Location	Date and Time of Monitoring	Monitored Results		Minnesota Daytime Standards	
		L_{10} (dBA)	L_{50} (dBA)	L_{10} (dBA)	L_{50} (dBA)
Site 1 – Residence located immediately to the west of 11952 University Drive	July 16, 2003 7:00 –8:00 am	62	45	65	60
Site 2 – Residence located at 34144 County Highway 4	July 16, 2003 7:00 –8:00 am	59	49	65	60

Daytime standards are in effect between 7 am and 10 pm (MN. Rules, part 7030.0200, subpart 3)

Table 24-2 and 24-3 show that all monitored levels, except the Nighttime L10 at Site 2 are below the Minnesota Standards. The monitored nighttime L10 level at Site 1 exceeds the Minnesota Standard by 3 dBA, which is attributable to traffic on County Highway 4. Results are consistent with those expected in a rural area and provide a relatively steady background noise environment that is dominated by traffic on local roadways.

Predicted Operational Noise

The facility is predicted to produce operational noise from a variety of sources including the turbine/boiler building operations, conveyor/reclaiming system, hammer mill and bale choppers, front end loaders, and idling trucks. Vendor supplied noise information and noise reference materials were used to estimate hourly equivalent noise levels (Leq) for each source at a specified distance. The stationary equipment will be housed in buildings or enclosures designed to provide additional noise attenuation. The noise levels were then propagated to the nearest receptors assuming a drop-off rate of 4.5 dB/distance doubled and combined with the existing background noise levels to predict overall operational noise levels. The propagation calculations included additional attenuation from the windrows of fuel supply and from the acoustically soft (absorptive) ground features of the surrounding agricultural fields.

During peak hour operations, noise emissions from the facility are assumed to be steady state. Under steady state conditions, the modeling results are considered to be equivalent to an L50 (the average sound level). Also under steady state noise emission conditions, an L10 value is approximately 3 dB higher than an L50 value. Therefore, noise modeling results were directly compared to MPCA daytime and nighttime L50 limits. Three decibels were added to noise modeling results to facilitate comparison with MPCA daytime and nighttime L10 limits. The 3 dB relationship between the L50 and L10 during steady state conditions is supported by FHWA in the Highway Noise Fundamentals document dated September 1980. It states that a 0.5 dB relationship between L10 and L50 is possible during steady state conditions. Use of a 3 dB difference is therefore conservative and appropriate for impact determination purposes.

The nearest sensitive receptor to Site 1 is located approximately 2,500 feet east southeast of the facility. Operational noise levels at this site are not predicted to exceed the daytime or nighttime Minnesota L50 and L10 Noise Standards. The nearest sensitive receptor to Site 2 is located approximately 150 feet east of the facility property line and approximately 900 to 2500 feet from the operational activity areas. Operational noise levels for Site 2 are not predicted to exceed the Minnesota L50 daytime and nighttime standards or the L10 daytime noise standards. The operational noise levels are also not predicted to increase the L10 nighttime noise levels, which currently exceed the Minnesota Standards. These results are presented in Table 24-4 below and compared to the Minnesota Daytime and Nighttime Standards.

Table 24-4
Modeling Results Compared with MPCA Daytime/Nighttime Noise Standards

Location	Predicted Daytime	Predicted Nighttime	Minnesota Daytime Standards	Minnesota Nighttime Standards
	L_{10}/L_{50} (dBA)	L_{10}/L_{50} (dBA)	L_{10}/L_{50} (dBA)	L_{10}/L_{50} (dBA)
Site 1 – Residence located immediately to the west of 11952 University Drive	63/53	54/43	65/60	55/50
Site 2 – Residence located at 34144 County Highway 4	65/60	58*/48	65/60	55/50

* Existing Noise Levels exceed Minnesota Nighttime L50 Noise Standard at this location for Noise Area Classification 1.

25. **Nearby resources. Are any of the following resources on or in proximity to the site?**
Archaeological, historical or architectural resources? __Yes _X_ No
Prime or unique farmlands or land within an agricultural preserve? _X_ Yes __ No
Designated parks, recreation areas or trails? _X_ Yes __ No
Scenic views and vistas? __Yes _X_ No
Other unique resources? __Yes _X_ No

If yes, describe the resource and identify any project-related impacts on the resource. Describe any measures to minimize or avoid adverse impacts.

Archaeological, Historical, or Architectural Resources
On May 5, 2003, a letter was sent to the State Historic Preservation Office (SHPO) requesting review of the proposed project area for potential archaeological and/or historical resources. The SHPO responded on June 6, 2003 that a review of the proposed project identified no properties listed on the National or State Registers of Historic Places, and no known or suspected archaeological properties in the area that will be affected by the proposed project. A copy or the SHPO response is included in Appendix A

Prime or Unique Farmland
Prime farmland is the land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber and oilseed crops. The Natural Resource Conservation Service (NRCS) classifies soils that are considered prime farmland. Several soils at the project site are characterized as prime farmland.

At Site 1, Clarion Loam (L79B), Nicollet clay loam and Le Sueur clay loam (L90A) are considered prime farmland soils. Webster clay loam (L83A) and Glencoe clay loam (L84A) are considered prime farmland when drained. These soils when combined make up most of the project area.

At Site 2 Nicollet clay loam (L85A), Le Sueur clay loam and Reedslake loam are considered prime farmland soils and Webster clay loam (L83A) is considered a prime farmland soil when drained. These soils when combined make up most of the site area.

The limitation of 0.5 acres of farmland per MW of generating capacity specified for Large Electric Power Generating Plants (LEPGP) under Minnesota Rules 4400.3310, subp. 4, does not apply in this case, since the proposed project is not a LEPGP.

Designated parks, recreation areas or trails
Loon Lake is approximately 1 mile northeast of Site 1. The Dakota, Minnesota & Eastern Railroad, Trunk Highway 14 and several businesses separate the site and Loon Lake. Clear Lake is approximately 2 miles northwest of Site 1 in northeast Waseca. The Tom Cliff Jr. Memorial Wildlife Management Area is located approximately 3 miles northwest of the sites. The Findley and Moonan Wildlife Management Areas are located approximately 5 miles northwest of the sites. The Kanne Wildlife management area is approximately 5 miles southwest of the sites. Waseca Wildlife Management Area is approximately 5 miles west of the sites. The Senn-Rich Wildlife Management Area is approximately 4 miles southeast of the sites. There are a number of city parks in Waseca, as well as a bike trail around Loon Lake and the Waseca County Fairgrounds. Courthouse County Park is approximately 3 miles south of the sites. There are no state parks or designated trails within five mile of the sites. There is sufficient distance between the sites and designated parks, recreation areas and trails that no impacts are anticipated.

Scenic Views and Vistas

The project will not impact any scenic views or vistas.

26. **Visual impacts. Will the project create adverse visual impacts during construction or operation? Such as glare from intense lights, lights visible in wilderness areas and large visible plumes from cooling towers or exhaust stacks? _X_ Yes __No**

If yes, explain.

The plant will be visible from all directions and have an industrial characteristic compared to its current agricultural use. The stack will be approximately 150 feet tall and the boiler house will be approximately 130 feet tall. Because both sites are located near the city of Waseca, there are other manmade structures with comparable height in the project vicinity. Approximately 1 ½ mile north of Site 1 is an industrial facility with stacks of approximately 60 feet and above ground storage tanks. There are also a number of communication towers with a height similar to the stack in the Waseca area.

The plant itself will be relatively small in comparison to the total footprint of the site. A large portion, approximately 40 acres of the site, will be used for fuel storage. The fuel storage will provide a visual buffer between the project and some of the surrounding uses.

The conveyors used for handling fuel will rise at an incline between the fuel handling area and the boiler. The conveyors will be lighted at night to allow for continuous operation of the plant.

The transmission line that will connect the project to the transmission grid will be visible. The transmission line will be similar to existing transmission lines in the area.

The exhaust gas will have little particulate matter, so plumes or vapor clouds should not be visible from exhaust stacks for most of the year. On some occasions, particularly in cold weather, a water vapor plume from the exhaust stack may be visible. In addition to the vapor plume from the exhaust stack, a plume from the cooling tower may also be visible during periods of high humidity.

Stack lighting will conform with the current FAA Advisory Circular – AC 70/7460 and FAA recommendations for obstruction marking and lighting.

Exterior lighting will be sufficient to allow 24-hour operation of the fuel handling system. Minor maintenance and walk down inspections of the conveyor systems will be required during all shifts of the 24-hour period. Exterior lighting is anticipated for all conveyor walkways and stackout and reclaim areas. Lighting will also be required at all fuel receiving points, scales and vehicle access roadways and parking areas. Lighting impacts will be similar to impacts from yard and streetlights.

27. **Compatibility with plans and land use regulations. Is the project subject to an adopted local comprehensive plan, land use plan or regulation, or other applicable land use, water, or resource management plan of a local, regional, state or federal agency? _X_ Yes __ No.**

If yes, describe the plan, discuss its compatibility with the project and explain how any conflicts will be resolved. If no, explain.

Both sites are outside of the city of Waseca and are being studied by the city of Waseca for annexation. At this time, both sites are subject to the Waseca County zoning ordinances and comprehensive plan.

Site 1 is zoned "A", agricultural, and site 2 is zoned "B," highway commercial. Both sites are adjacent to

land zoned as industrial or institutional. Given the neighboring uses and the proposed relocation of TH 14, the project is compatible with other land uses in the area.

The current Waseca County comprehensive plan was adopted in 1972 and is being revised at this time. A draft of the revised comprehensive plan will be released in late summer or early autumn of 2003.

28. **Impact on infrastructure and public services. Will new or expanded utilities, roads, other infrastructure or public services be required to serve the project? _x_Yes __No.**

If yes, describe the new or additional infrastructure or services needed. (Note: any infrastructure that is a connected action with respect to the project must be assessed in the EAW; see *EAW Guidelines* for details.)

Natural Gas Pipeline: Because the plant may use natural gas as a fuel for startup and shutdown, the plant may require a short tap from the Northern Natural Gas pipeline that crosses the plant property. Either NGPP Minnesota Biomass, LLC or Northern Natural Gas will obtain a state or federal permit for the tap.

Electric Transmission Line: A transmission line will be constructed to deliver the plant's generation into the electric transmission system near the Loon Lake substation. The transmission owner will seek local or state approval for this transmission line.

Sewer Service: Sewer service from the city of Waseca may be extended to either site.
Water Service: The city of Waseca may extend water service to either site.

29. **Cumulative impacts. Minnesota Rule part 4410.1700, subpart 7, item B requires that the RGU consider the "cumulative potential effects of related or anticipated future projects" when determining the need for an environmental impact statement. Identify any past, present or reasonably foreseeable future projects that may interact with the project described in this EAW in such a way as to cause cumulative impacts. Describe the nature of the cumulative impacts and summarize any other available information relevant to determining whether there is potential for significant environmental effects due to cumulative impacts *(or discuss each cumulative impact under appropriate item(s) elsewhere on this form).***

Farmers may change from corn and soybean farming to tree plantations to be used at the facility.

30. **Other potential environmental impacts. If the project may cause any adverse environmental impacts not addressed by items 1 to 28, identify and discuss them here, along with any proposed mitigation.**

There are no other known environmental impacts from this project.

31. **Summary of issues. *Do not complete this section if the EAW is being done for EIS scoping; instead, address relevant issues in the draft Scoping Decision document, which must accompany the EAW.* List any impacts and issues identified above that may require further investigation before the project is begun. Discuss any alternatives or mitigative measures that have been or may be considered for these impacts and issues, including those that have been or may be ordered as permit conditions.**

Air Emissions: The NGPP Minnesota Biomass plant will be classified as a major stationary source of emissions and will require an air emission permit from the MPCA under Federal New Source Review Prevention of Significant Deterioration and Minnesota regulations. The plant will demonstrate compliance with applicable air quality standards through use of an approved dispersion model. Details concerning the

ambient air quality analysis are presented in the PSD permit application for the plant.

***Wetlands**:* Both sites contain wetlands that may be impacted by the project. Site 1 has three wetlands with a total land area of approximately 0.29 acres. Site 2 has eight wetlands with a total land area of approximately 3.56 acres. If wetlands are affected on either site all appropriate permits and approvals will be obtained.

Noise: Operational noise levels at Site 1 are predicted to remain within both daytime and nighttime Minnesota Noise Standards. Operational noise levels at site 2 are predicted to remain within Minnesota daytime L50 and L10 standards and within nighttime L50 noise standards. The operational noise levels at Site 2 are not predicted to increase the L10 nighttime noise levels, which currently exceed Minnesota Standards.

***Visual Impacts*:** The plant will be visible from all directions and have an industrial characteristic compared to its current agricultural use. The stack will be approximately 150 feet tall and the boiler house will be approximately 130 feet tall. Because both sites are located near the city of Waseca, there are other manmade structures with comparable height in the project vicinity. The plant itself will be relatively small in comparison to the total footprint of the site. A large portion, approximately 40 acres of the site, will be used for fuel storage. The fuel storage will provide a visual buffer between the project and some of the surrounding uses.

RGU CERTIFICATION. The Environmental Quality Board will only accept **SIGNED** Environmental Assessment Worksheets for public notice in the EQB Monitor.

I hereby certify that:

- The information contained in this document is accurate and complete to the best of my knowledge.
- The EAW describes the complete project; there are no other projects, stages or components other than those described in this document, which are related to the project as connected actions or phased actions, as defined at Minnesota Rules, parts 4410.0200, subparts 9b and 60, respectively.
- Copies of this EAW are being sent to the entire EQB distribution list.

Signature Date

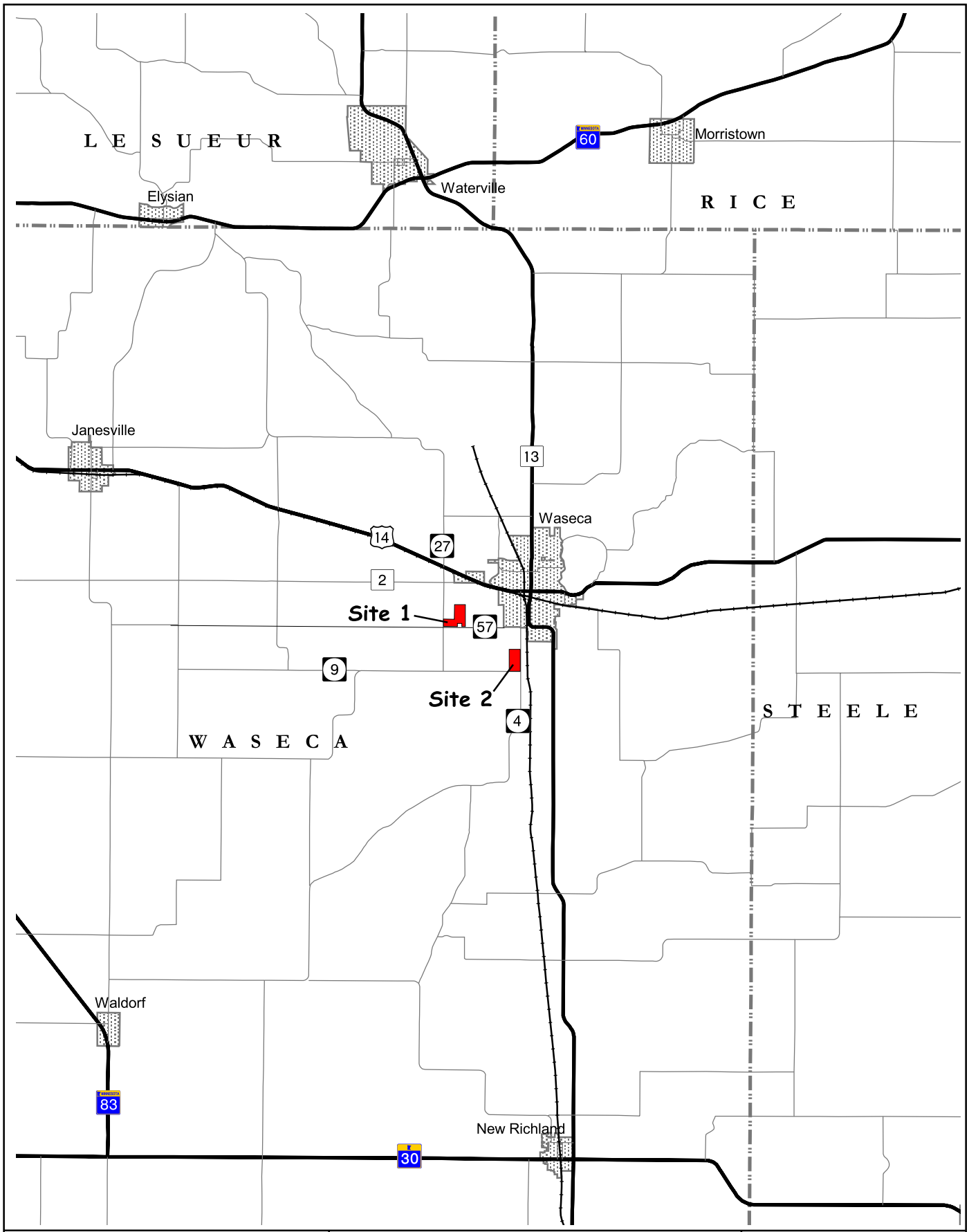
Title

Environmental Assessment Worksheet was prepared by the staff of the Environmental Quality Board at Minnesota Planning. For additional information, worksheets or for *EAW Guidelines*, contact: Environmental Quality Board, 658 Cedar St., St. Paul, MN 55155, 651-296-8253, or www.eqb.state.mn.us

Figures

Appendix A

Agency Correspondence



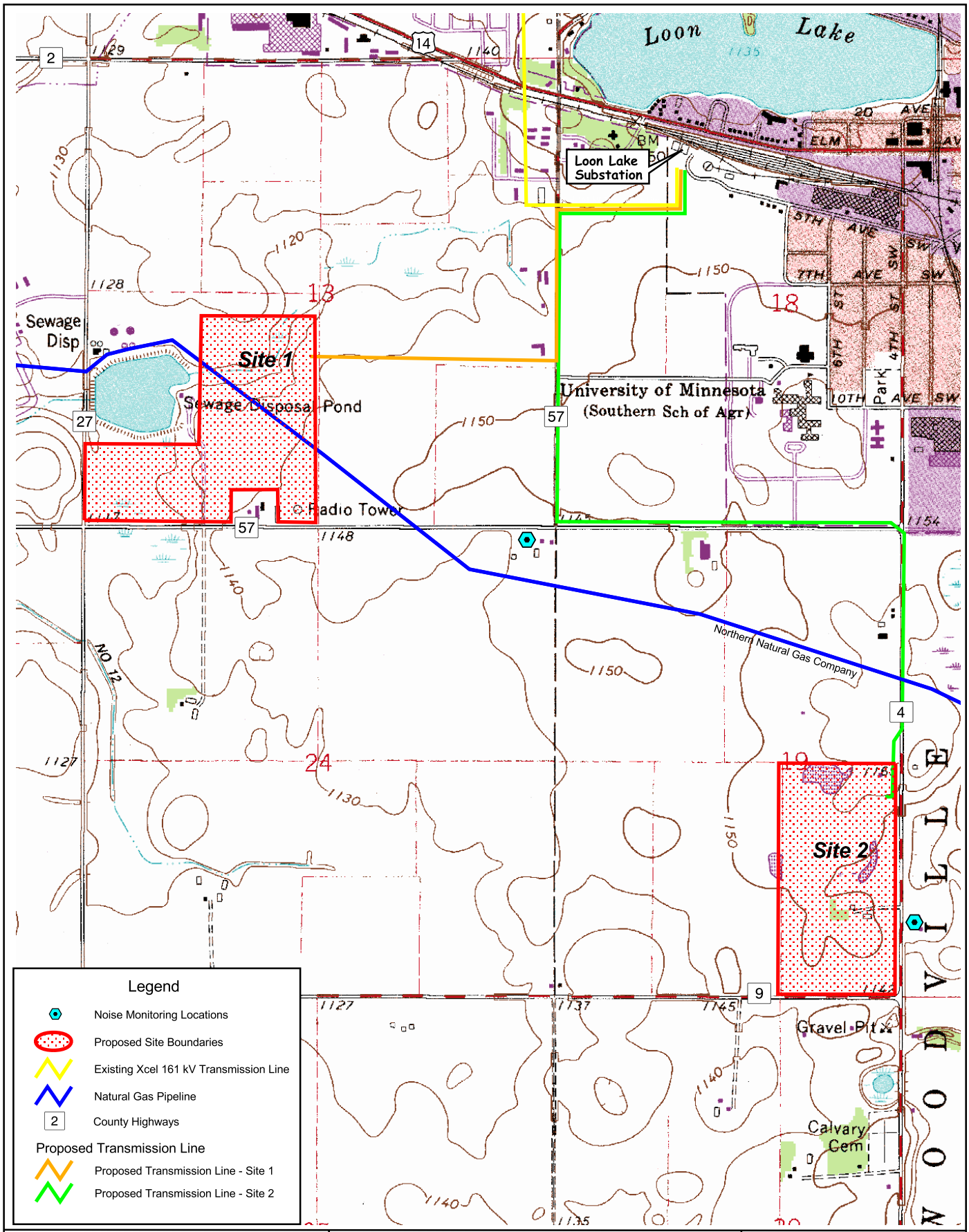
DRAFT

0 1.5 3 4.5 Miles

N

Figure 1 - General Vicinity Map
NGP Power MN Biomass
Waseca County, MN

HDR



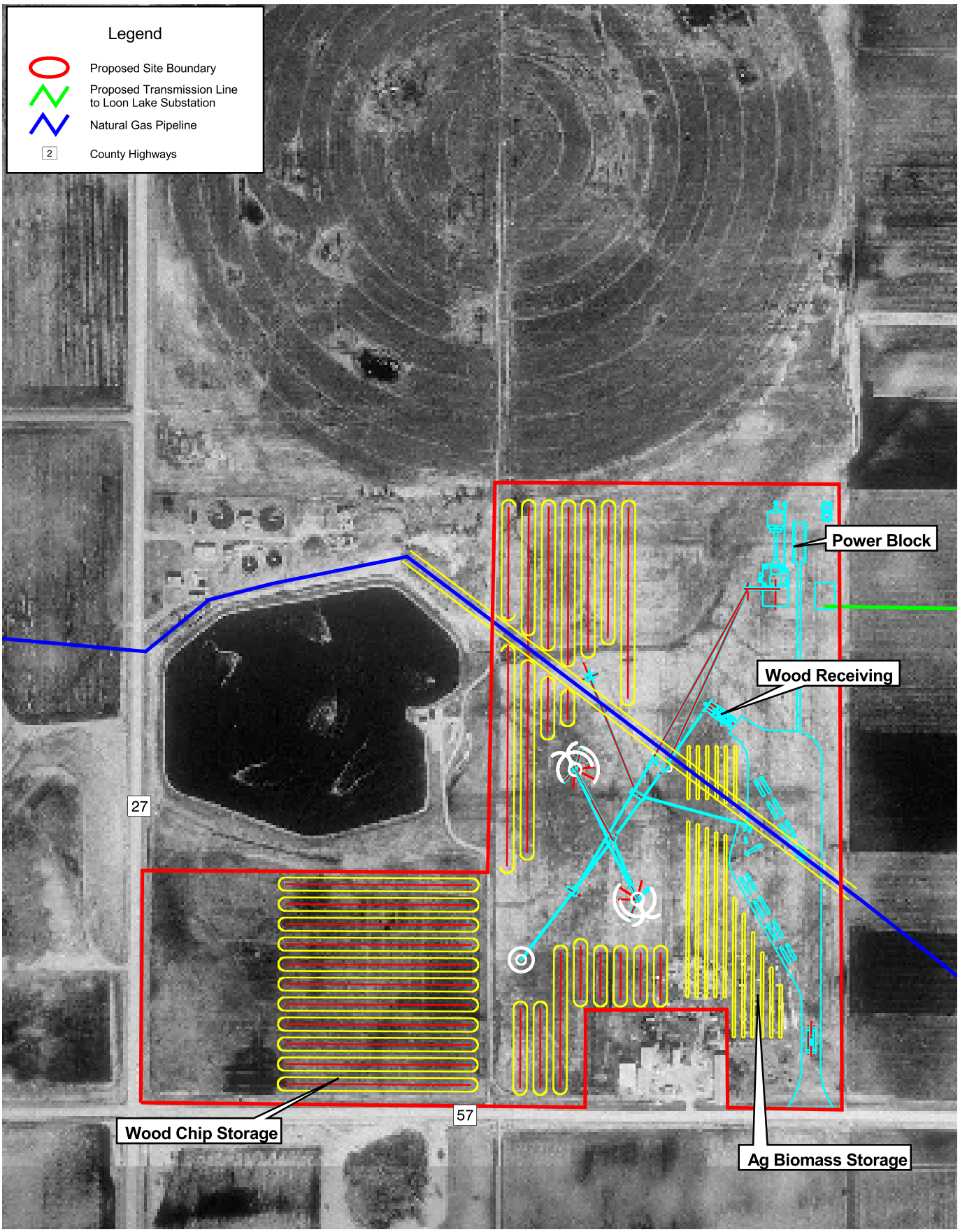
DRAFT

0 1000 2000 Feet

N

Figure 2 - Site Location Map
NGP Power MN Biomass
Waseca County, MN

HDR



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N

Figure 3a - Preliminary Site Layout Map, Site 1
NGP Power MN Biomass
Waseca County, MN

HDR

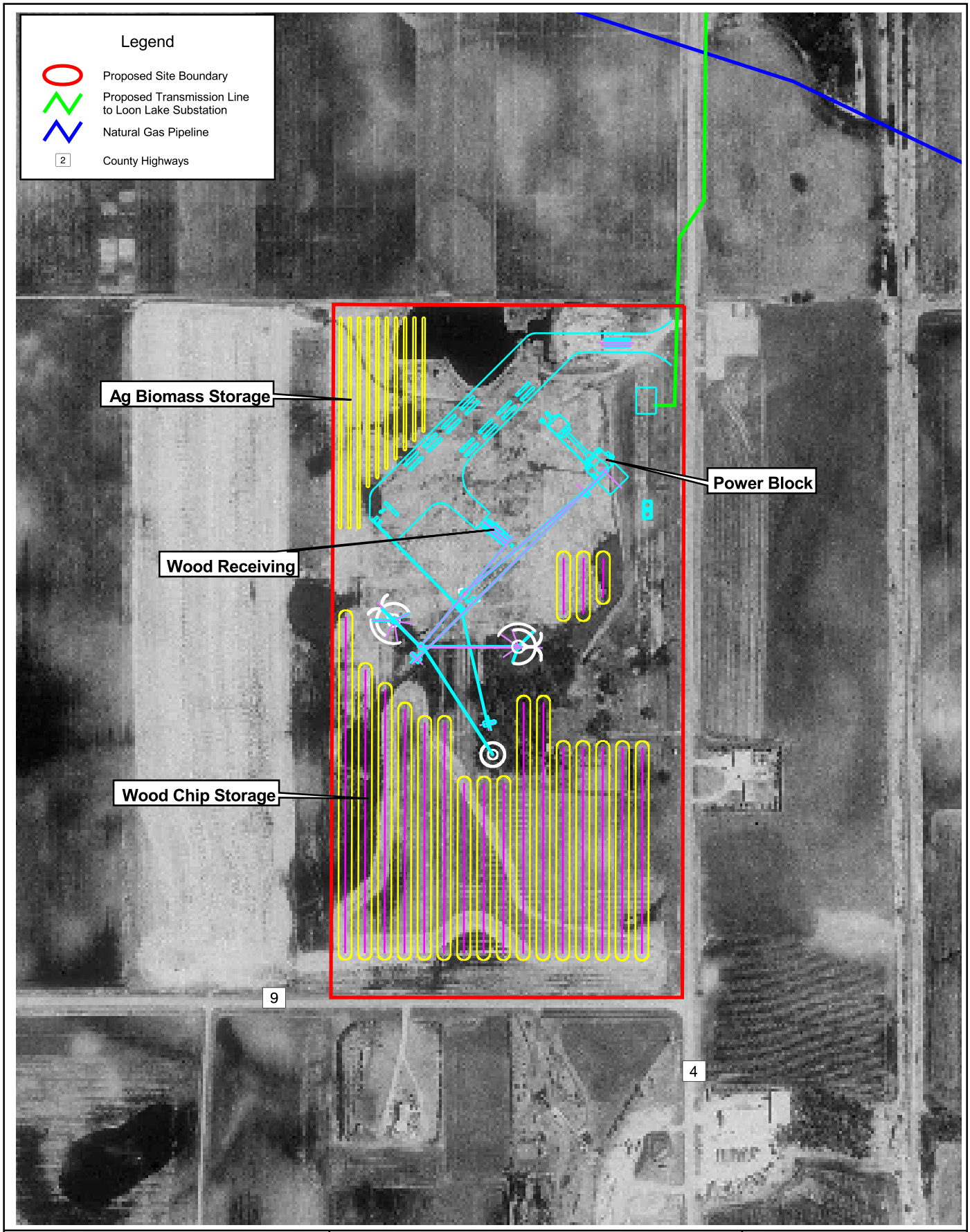

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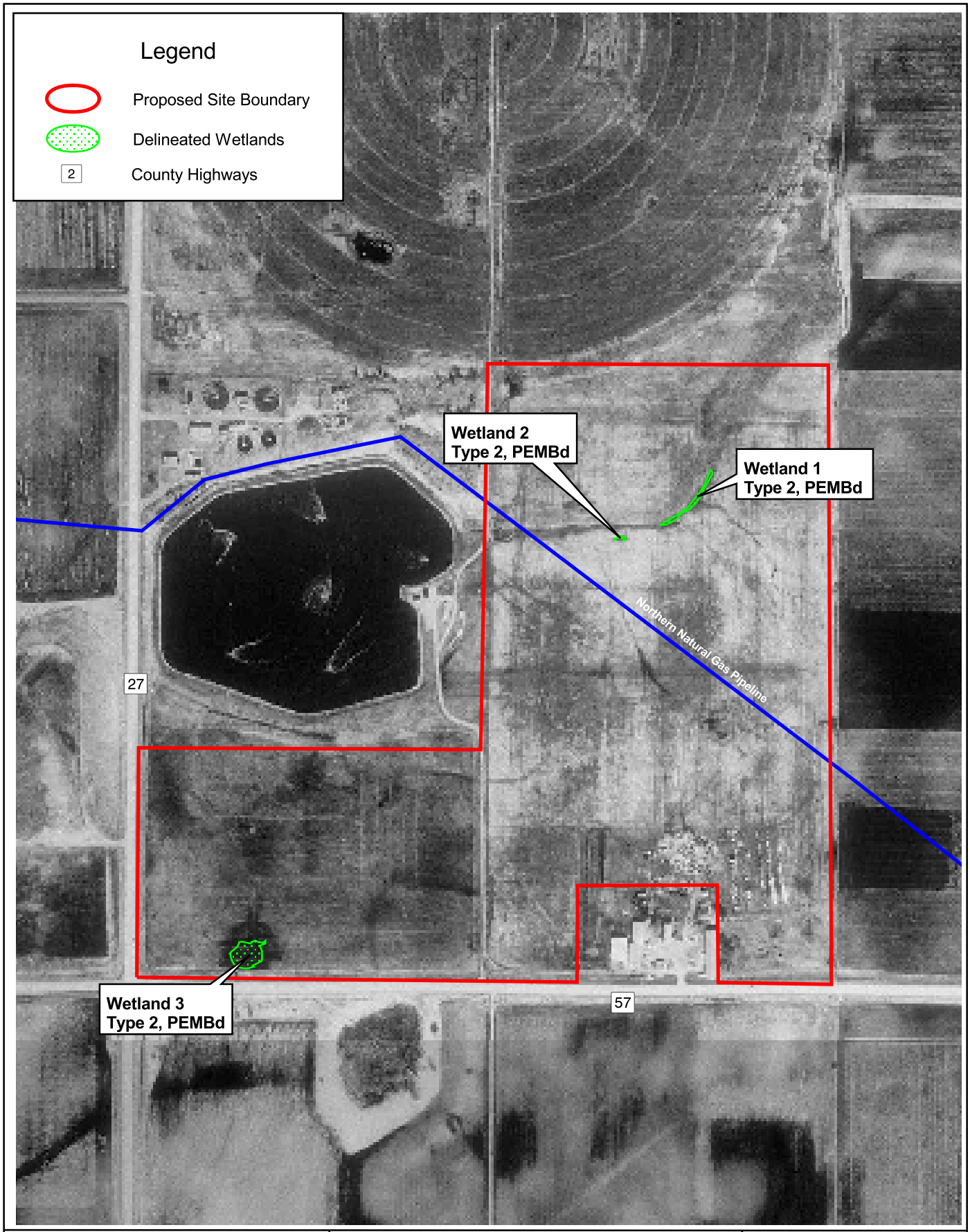
Figure 3b - Preliminary Site Layout Map, Site 2
NGP Power MN Biomass
Waseca County, MN

HDR



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0 250 500 750 Feet

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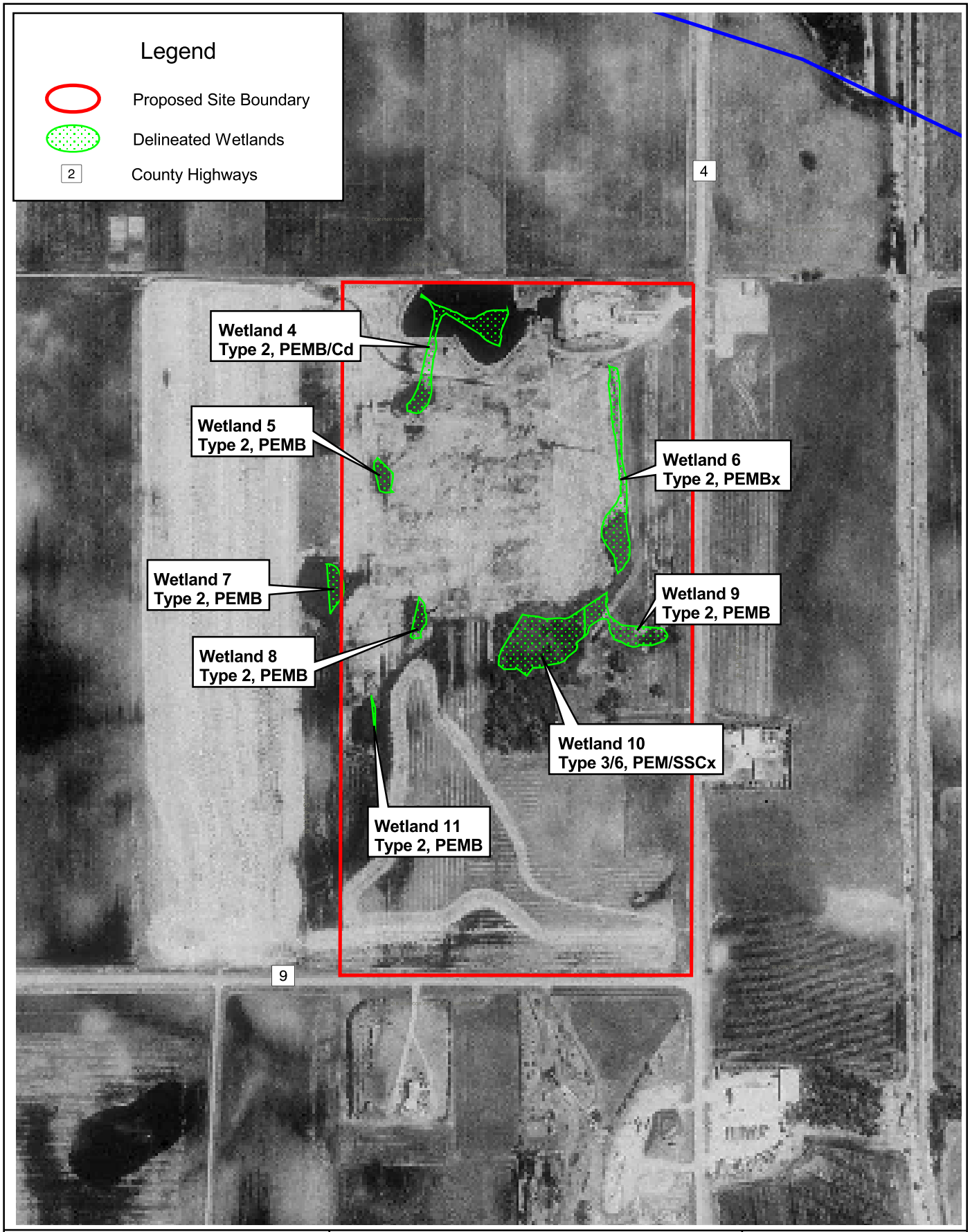
Figure 4a - Delineated Wetlands Map, Site 1
NGP Power MN Biomass
Waseca County, MN

HDR



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0 250 500 750 Feet

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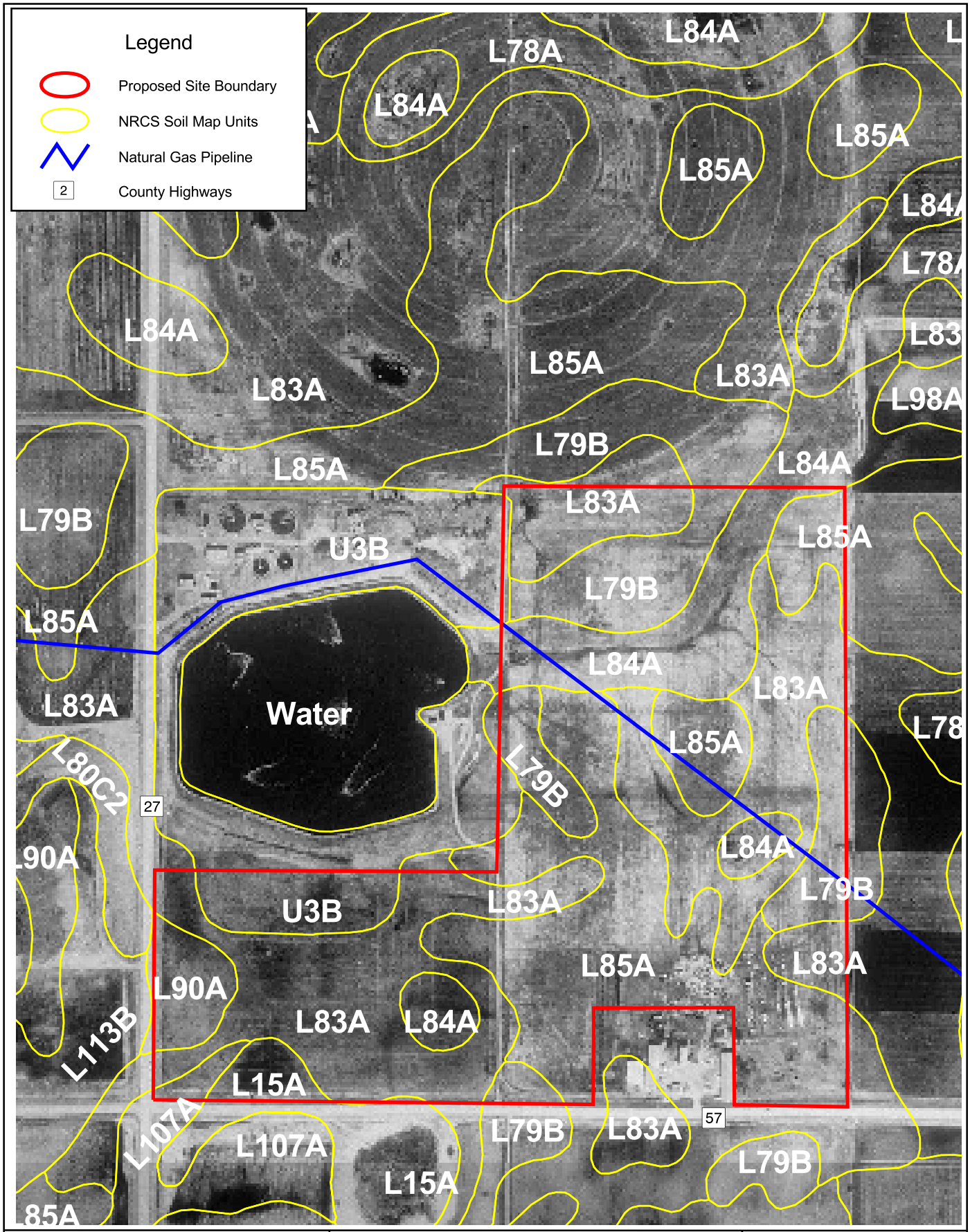
Figure 4b - Delineated Wetlands Map, Site 2
NGP Power MN Biomass
Waseca County, MN

HDR



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0 250 500 750 Feet

N

Figure 5a - NRCS Soils Map - Site 1
NGP Power MN Biomass
Waseca County, MN

HDR

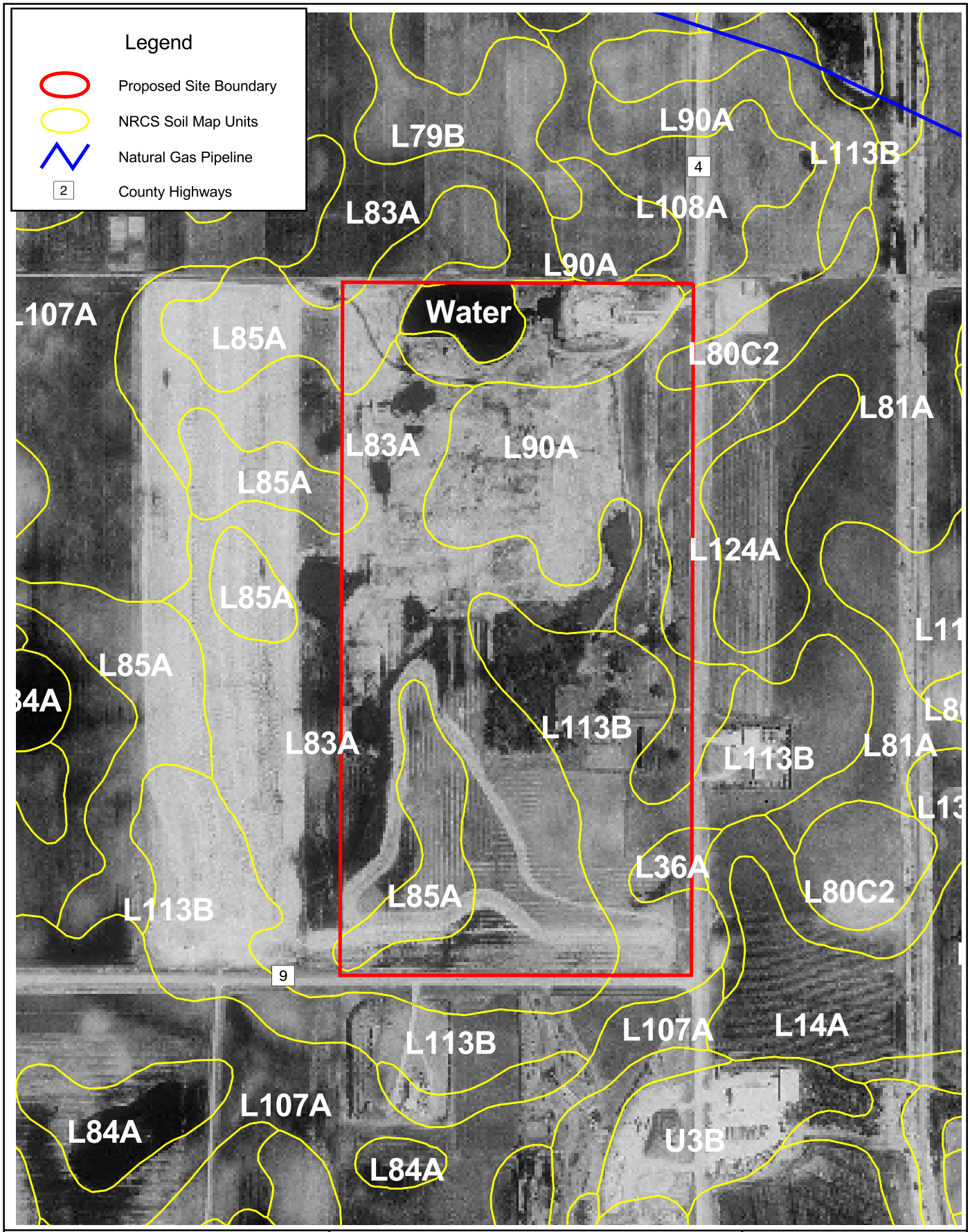

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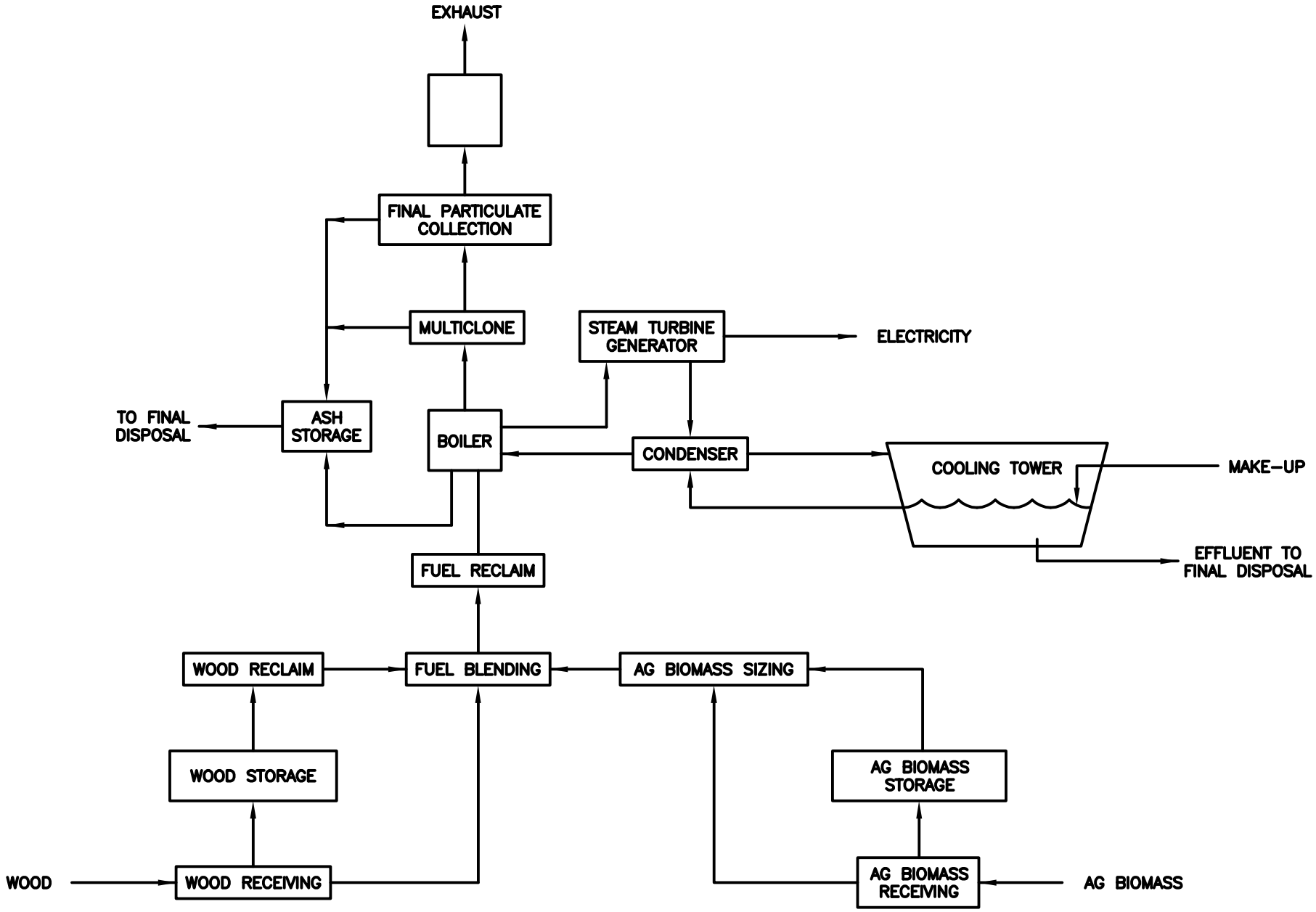
Figure 5b - NRCS Soils Map - Site 2
NGP Power MN Biomass
Waseca County, MN

HDR



- DRAFT -

Figure 6 - Process Flow Diagram
NGP Power MN Biomass
Wasecca County, MN